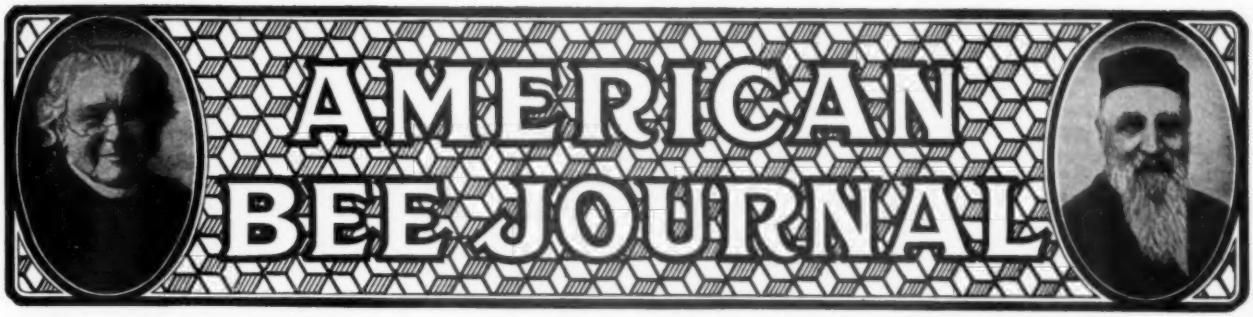


Vol. LXXIII—No. 8 Hamilton, Illinois, August, 1933 Monthly, $1.00 a Year

Frozen Honey—A New Product

By R. E. Lothrop and S. I. Gertler Carbohydrate Division, Bureau of Chemistry and Soils, U. S. Department of Agriculture.

ALTHOUGH frequent reference has been made to the use of honey in ice cream and sherbet mixes, (1), (2), (3) and (4), so far as the authors are aware the idea of using honey directly as a frozen dessert has never been advanced.

It was discovered accidentally during the course of some laboratory experiments involving the freezing of honey solutions by use of solid carbon dioxide ("dry ice"), that a honey solution can be frozen very quickly to produce what we believe to be a very palatable dessert. Quick freezing of the honey, using powdered "dry ice" with rapid stirring, yields a product of very smooth texture resembling sherbet in appearance and consistency. Similar results are obtained by use of an ordinary ice cream freezer and an ice and salt mixture. In either case the addition of a flavoring substance is not necessary, since the honey gives to the product all of the delightful original honey flavor, which is even accentuated to a considerable extent. Nothing but honey and water are used.

The most suitable proportion of honey to water is approximately one part by volume of honey dissolved in two volumes of water, although this proportion may be varied somewhat, depending on individual taste. To make frozen honey by use of "dry ice" almost any container of the shape of a large jelly glass can be employed. When freezing is to be carried out by adding the powdered "dry ice" directly to the honey solution, only the single container is needed. In this event it is well to wrap the container tightly with a folded towel in order to facilitate handling as well as to insulate the container partially so as to prevent too great a loss of the cooling effect.

A lump of "dry ice" is finely powdered (a small canvas bag and hammer serve excellently for this purpose), and the "dry ice" is added in small portions directly to the honey solution; the mixture is stirred rapidly at the same time to insure proper freezing. The addition of powdered "dry ice" with stirring is continued until the correct consistency is obtained. The use of "dry ice" in finely powdered form serves as a protection against small lumps remaining in the frozen honey, but as an additional precaution it is best to allow the latter to stand several minutes before serving in order to make certain that all of the "dry ice" has entirely evaporated.

Quantities up to one quart can be frozen in five minutes. In addition to the short time required the use of "dry ice" in this manner is advantageous in that the rapid freezing produces a fine smooth texture. The freezing with "dry ice" may also be carried out by surrounding the container with the powdered ice instead of adding it directly to the honey solution. This method requires an outer container (similar to the arrangement of an ice cream freezer) for packing the "dry ice" around the inner container and also requires a slightly longer period of time to freeze.

A small wooden pail serves well as an outer container. There should be sufficient space between the inner container (preferably made of metal such as a large drink mixer) and the outer container for packing with "dry ice." The mixture is stirred very rapidly while freezing in the same manner as when adding the "dry ice" directly. Approximately one and one-half pounds of "dry ice" are required to produce one quart of the frozen product.

It is rather unfortunate that at the present time "dry ice" is not always conveniently obtained, so that this method of freezing is not available in all cases. Using an ordinary ice cream freezer, and an ice and salt mixture (two parts of ice and one part salt) it was found possible by rapid turning to freeze quantities up to one quart in five minutes. The texture of the product obtained in this manner, due to the rapid freezing, was practically as good as that in which "dry ice" was used. Slow freezing methods are not recommended, as the texture of the product produced is usually poor, small ice crystals appearing throughout the mass.

The most remarkable features of frozen honey are texture and flavor. Possessing a texture equal to that of any frozen dessert, the flavor effects are most unusual. When attempts are made to incorporate honey with other products in various ways, especially when heating is necessary as in candy making or in baking, the greatest concern is retention of honey flavor. Often one is satisfied to retain only part of the honey flavor, and frequently most of the delicate honey aroma is either lost in the cooking process, or is masked by other substances present. In the case of frozen honey, however, not only is all the honey flavor retained, but the flavor actually appears to be intensified considerably, and it is possible to detect in frozen honeys of various floral types certain flavor characteristics that are not discernible in the same product when consumed in ordinary liquid form.

In this connection it is suggested that for comparative purposes, this method of freezing honey might be used advantageously in order to judge better the flavor of various honey types. Apparently, in spite of the dilution with water, the flavor of honey is brought out much more fully when consumed in this form as compared with consumption in ordinary liquid form.

Possibly the quick melting of the frozen honey in the mouth produces a greater concentration of honey flavor than it is possible to obtain by

consumption of an equivalent quantity of ordinary liquid honey due to the longer period of time required for it to dissolve in the fluids of the mouth. From the standpoint of flavor alone frozen honey should appeal especially to many honey fanciers who are familiar with and fully appreciate the great diversity of flavors among honeys derived from different floral sources. It will also enable persons inexperienced with honey to appreciate better the differences in flavor of typical honeys and the great range of flavor which is available.

In case a slight toning down of sweetness and honey flavor is desired, this may be easily accomplished by addition of a small quantity of lemon juice. For mild flavored honeys the following proportions are recommended for making one quart of the frozen dessert: three-fourths cup of honey dissolved in one and one-half cup water to which the juice of one lemon is added. The mixture is then frozen by one of the methods given above. Because of the intensified flavor effect produced by freezing, mild flavored honeys are especially recommended for this purpose.

It is hoped that this method of utilizing honey will help to bring about a greater appreciation of the individuality of honey flavors. Too few consumers of honey realize that such great differences and variety of flavor are to be found in honeys produced from different floral sources. In no other saccharine product is it possible to find such a great diversity of delicate flavors as that furnished by our typical domestic honeys. The fact that frozen honey accentuates these flavors considerably should help to bring about a greater appreciation of the individual characteristics of various honeys, as well as offering a new and attractive dessert, especially for the summer months.

(1) Tracy, "The Use of Honey in Ice Cream," American Bee Journal, 69, p. 61, (1929).
(2) Tracy, Ruehe and Sanmann, "Use of Honey in Ice-Cream Manufacture," Illinois Experiment Station Bulletin No. 345 (1930).
(3) Smallfield, "The Use of Honey in Water-Ices and Sherbets," Scientific Agriculture, 11, 259 (1931).
(4) Lucas, "Honey in Ice-Cream," Gleanings in Bee Culture, April, 1931.

Prize Winning Radio Recipes

Honey for Chapped Hands

1 egg white — 1 ounce honey
1 teaspoon glycerine — Barley flour

Prepare as follows: Mix egg white, glycerine and honey together. Add sufficient barley flour to make a paste.

Honey Soap

Cut two pounds of yellow or castile soap in thin slices and put in saucepan with sufficient water to prevent the soap from burning. Place on fire and as soon as all the soap is dissolved add one pound of honey and stir until it begins to boil. Remove from fire, add a few drops of essence of cinnamon or any perfume. Pour into deep pan to cool, then cut into squares. It improves by keeping.

Use Honey to Thrill the Appetite

Use honey to sweeten coffee, tea and all fruits. It will improve the flavor and add a zest to life.

Oliver Hickel, Missouri.

A New Way to Find the Queen

By Edward Fontaine
Maryland

Finding the queen is not so easy for one over fifty with weak eyes, so I must tell other poor suffering amateur bee men what I have learned about this difficult job.

First—pick suitable weather with moderate sunshine which does not glare and blind you. About 3 to 6 o'clock when the worker bees are out in the field.

Do not use a white sheet on which to shake the bees as the white will glare and blind the eyes. Any dark color is better but green is best. I have designed a special "shield" to keep the bees from getting back in the hive too quickly while I am looking for the queen. It is made of wire screen 3 feet wide, 6 feet long, with a queen excluder fixed in the center and removable and a light box behind the excluder to hold the bees as they pass through. The box should be 4 inches deep and much larger than the excluder and detachable.

To begin—close the hive entrance. Set the shield against the front of the hive with just a little tilt, so you can see the queen if she is stopped by the excluder. Put two stakes in the ground to hold the shield in place if you should want to move the hive away. Spread a green-colored sheet on the ground, leading up to the excluder, with stones on each corner. Now you are ready to open the hive. Use a good pair of tweezers to kill the queen if you do not wish to save her. Start with the second frame on the opposite side and place the first two frames out on the ground. Do not put over ten seconds looking at any one side of a frame, as too intently staring at it puts a strain on weak eyes. If necessary, close your eyes to rest and then look at another for ten seconds. This is important. Do not be in a hurry so as to get in a sweat and blind your eyes.

If you have weak eyes or are inexperienced or have cross bees, you may not find the queen even after looking carefully over the first eight frames. Now take out the two frames that are left and the queen may be on the inside wall of the hive but there may be so many bees, you cannot see her. A mirror to flash light on the inside wall may help you.

Rest your eyes a few minutes and then put a second hive near the sheet and a block of wood on the sheet to jar the bees off with. Take out the frames all over again and shake each one on the far side on the sheet and look for the queen in succession and put the shaken frames in the second hive.

If the queen is not found on the ten frames, she may be in the crowd of bees in the hive or on the excluder so you must take hold of the hive and jar it sharply on the block of wood on the sheets in front.

I have tried an entrance guard to find the queen but it does not work as the bees pile up on the front and increase your troubles.

Honeybees and Lucerne

The Agricultural Gazette of New South Wales in its May 1 number has an article on "Honeybees in Relation to Lucerne Seed Setting" by R. E. P. Dwyer and S. I. Allman.

Observations were carried on over two seasons to ascertain the benefit derived in seed setting through bees. A check was made both of the "tripping" of the blossoms by the honeybees and of the pollination without tripping.

Conclusions were that there was a wide diversity in amount of tripping observed, the maximum amount being 65 per cent of the flowers visited. Satisfactory pollination was accomplished by the bees even where there was minimum amount of tripping of the flower.

The result of caging of bees in a chosen field of Lucerne with check fields caged without bees, and fields outside proved conclusively that honeybees were almost an absolute necessity. Climatic and environmental conditions too, had their influence on the seed setting of the plant.

Steel Barrels for Honey

There is a possibility that a new steel barrel, made by the A. O. Smith Corporation of Milwaukee, Wisconsin, might be suitable for the shipment of bulk honey. They are made in half barrel size, selling for $6.50 f.o.b. plant Milwaukee. Their company is working on a quarter barrel, which will probably be a third less as expensive. Anyone interested might write for a quotation on a sample for test purposes.

Supplement to the Consolidated Freight Classification, effective July 20, 1933, now permits honey moving less carload or carload to be packed in iron or steel barrels and take the same rate as in wooden barrels or 5-gallon cans, the metal barrel not having heretofore been a permissible container.

There is no change in the less carload or carload rates on this commodity.

Lewis Parks,
Wisconsin.

Mixing Honey and Nuts

By J. A. Neilson
Research Specialist in Horticulture
Michigan State College

In the June issue of the American Bee Journal, J. D. Ballantyne of New Zealand asked for information on mixing nuts with honey. Here are three recipes for honey nut combinations that have been used and found very satisfactory here. I have not made any tests as to the keeping qualities of these combinations. I do know this, however, that the Australian nut (Macadania Ternifolia) when finely ground and mixed with honey will keep for several months in good condition.

Sometime ago I received from J. D. Waldron of Upper Eungella Tweed River, New South Wales, a jar of finely ground Australian nuts mixed with honey which arrived in good condition and was kept in a hot room for eight weeks when it was perfectly fresh and in good eating condition.

(1) Bon-bons

Take nut meats of any favorite kind and run through a food chopper, using the coarse plates. Sprinkle a little salt on the ground-up nuts and mix with honey as follows:

Nuts—1 cupful.

Granulated honey (reduced to the consistency of cream by heating)—1 tablespoonful (Liquid honey will do but is more difficult to mix.)

Mix thoroughly with a fork or spoon until all the nut particles have been well coated with honey. If desired, a little shredded cocoanut may be mixed with the nuts and honey. Mold into suitable portions, place in a paper cup or other container and serve as a dessert or confection.

(2) Sandwich Spread

Take nut meats of any favorite kind and run through a food chopper using fine plates. Add a little salt and then mix with liquid honey in the following proportions:

Nuts—1 pound.

Liquid honey—1 pound.

Use as a spread on bread, toast, wafers, or as a filling for sandwiches, cookies, etc.

(3) Honey-Nut-Date Combinations

Procure large dates and remove the stones; then fill the cavity in the dates with the honey nut combinations (1) or (2).

Bears Still Do Damage

A recent clipping from the California Cultivator states that a bear lately destroyed 35 colonies of bees belonging to Banta & Wire of Tehama County, California. Messrs. Banta & Wire will be remembered as one of the big package shippers and queen breeders of California. Evidently there are still other bears besides the ones which frighten children at night.

THE HUMAN PUZZLE--Who Is He?

Hurray again! The number of guesses this time was increased to twenty. Now, we'll have to try once more.

Here's the picture of another well known beekeeper. We are making it easy this time, so come on folks, who is he? No hints, no suggestions. It's all up to you.

The July "Who Is He?"

The little fellow in the Barnum and Bailey picture is our Associate Editor, Frank C. Pellett of Atlantic, Iowa. No further introduction needed. The tall man is Wesley Potter. The picture was taken on Mr. Pellett's Nebraska ranch. Mr. Potter was working the place at the time the picture was taken. Some contrast. We had a notion that these two might sell out to Barnum and Bailey.

The first three correct guesses were: (1) N. J. Craig, Mitchellville, Iowa; (2) Elmer Kommer, Woodhull, Illinois; (3) Bert Aldrich, the Hawkeye Apiaries, Smithland, Iowa. Guesses were received from Iowa, Illinois, Nebraska, Kentucky, Alabama, Missouri, Ohio, California, Texas, Ontario, Quebec, Virginia and Wisconsin. There were three wrong guesses—M. I. Taylor of Richmond, Virginia mistook Frank C. Pellett for Jay Smith by comparing pictures published in the American Bee Journal. Arthur Sternenberg of Lockhart, Texas thought he was Jack Deyell, Manager of the Root Apiaries and Business Manager of "Gleanings in Bee Culture." Rev. J. N. Richard, of Blue Sea Lake, Quebec, thought it was Fred Marquette, queen breeder and beekeeper at Fargo, North Dakota.

Now take out your pencil and postcard and tell us who this beekeeper is.

Inspection in British Columbia

The inspection appropriation for British Columbia for the 1933 season is $4,000 with A. W. Finlay in charge. British Columbia has a total of 22,000 colonies of bees. The appropriation is therefore, approximately 18 cents per colony. We in the States should, to get a comparison, figure our home state in like terms. For instance Illinois, reputed to have 200,000 colonies should have $36,000 per annum to keep up the pace set by British Columbia.

Government Aid

As long as a man has money in his pocket he has a feeling of prosperity even though it is borrowed. The great boom which busted so suddenly was the result of the enormous spending of money by government agencies to prosecute the war. When it was all spent and we realized that we still had the debt to pay, the reaction was a sad experience. Now we are trying the experiment of repeating the same thing on a smaller scale. The recent appropriation of three billions of dollars for a public works' program will give a feeling of prosperity while the money is being spent but when it is gone and we realize that the public debt has been increased by that amount which the taxpayer must pay, we will be due for another reaction.

The American people find it hard to learn that they cannot borrow themselves into prosperity. Nothing comes from the government but must in turn be paid for by the taxpayer and tax paying is never a popular matter. Instead of reducing public expenses as has been the public demand, they are actually increased. A few services have been dispensed with, a few salaries cut and some reductions made only to double the amount by other new enterprises.

If public business could be conducted on the same basis that private business must be, the relief from the tax burden would in itself be sufficient to encourage an increase in business. Economists estimate that from one-third to one-half of the entire national income at present is consumed in taxes of one kind or another.

Interest in Live Bees

Wherever live bees are on display in an observation hive the public shows unusual interest. Even in the National Museum at Washington where strange and unusual things are brought together from all over the world the bees are reported as among the most popular exhibits.

It is hard to account for this fascination but always the result is the same. Whether the place is a store window, an exhibit at the fair, or in connection with some unusual educational exhibit, people crowd around to see the bees.

Such interest offers an opportunity for advertising which is seldom equalled. If beekeepers would make general use of the exhibition hive where honey is on sale, a large increase in demand would result, as everyone who has tried it can testify.

New Food Products

One is amazed at the number of new food products which are appearing in the market. Spreads, relishes, dressings and sweets of infinite variety are clamoring for the attention of the housewife. It would seem that some agency should give attention to finding new products of this kind in which honey would fill an important place. To keep up with the times is necessary for any industry which will survive. To do that requires constant study and attention.

An industry like beekeeping, which is composed of a large number of small producers who are unorganized, finds it extremely difficult to compete with large aggregations of capital where large sums are spent in research. If funds were available the Honey Institute could keep a large staff busy with such investigations in addition to the kind of work already under way.

Replacement of Honey and Wax

In former years honey was widely used in medicine. It was famous as an ingredient of cough syrups and had a place in the formulas of many other preparations. Now it is largely replaced by invert sugar and glycerine for all commercial preparations. Beeswax had so many commercial uses that it would be difficult to enumerate them all. Recently the writer started to compile a list of places where beeswax is used in industry and was surprised to find that it has been replaced in the greater number of cases by such substitutes as paraffine, mineral wax and carnauba wax. The demand for beeswax in manufacturing is constantly diminishing in favor of waxes which can be produced at a lower price and which are available in greater volume and more dependable supply.

One reason for this replacement has been the enormous increase in the output of factories which formerly used beeswax. It would be impossible to secure enough beeswax to meet the present day demands for some of the products formerly making use of it.

It is difficult to forecast the final effect of the changes in our industrial life on such products as honey and wax. Of one thing we may be sure, there are plenty of uses to which such high grade materials may still be put if only the producers are awake to their opportunities.

New Methods of Distribution

While we are talking about changes in industry we must not overlook the fact that entirely new methods of distribution of food products are now in use. Instead of the old time drummer who called on the grocer to get his weekly or monthly order to be shipped at a later date, we now find the dealer who carries his stock on a motor truck and delivers as he goes. Almost all kinds of seasonable produce are now carried from town to town by these dealers. Honey, berries, vegetables, everything is offered to the grocer every day. There is nothing that we can do about it, we must be prepared to meet this new competition. Beekeepers should be awake to enlist the interest of these salesmen in their honey. If they are not selling our honey they will carry that produced at a distance.

Time to Requeen

Much has been written regarding the proper time to requeen. Each writer assumes that the time which is correct for him must therefore apply quite generally. The fact of the matter is that the proper time depends upon external conditions and cannot therefore be the same for different localities.

Generally speaking it is desirable to requeen as late in the season as can be done without loss. In localities where the honeyflow comes late, fall requeening is quite successful. In localities where there is no summer or fall flow it is likely to be a difficult matter to get a high percentage of acceptance with late requeening.

The writer experimented with this matter for a number of years in a locality where the only good honeyflow came from the white Dutch clover. Toward the end of the flow it was usually possible to secure a very high percentage of acceptance and still get the queens established late enough for good results the following year. After the end of July the losses were so high that no careful beekeeper could consider the practice. Only a short distance away the flow from sweet clover coming later permitted requeening at a time which have resulted in failure for us.

The time of requeening like other operations in the apiary depends upon local conditions and can only be decided by one who is familiar with the sequence of events in the beekeeping year. It is a safe rule to lay down that losses will occur if requeening is attempted in a time of dearth.

The Weather

No one watches the weather with more apprehension than the beekeeper. To a very large extent his prosperity depends upon it. If it is too wet or too dry the honeyflow may fail and a late frost may destroy the flowers upon which his bees depend. All branches of farming are dependent upon favorable weather but none more than the honey producer.

In the present season many mid-western beemen have seen the finest prospect in years changed to near failure through drought, in a few days' time. White Dutch clover bloomed abundantly and the flow started with great promise. Pastures and roadsides were white with the blossoms and everything indicated a heavy yield.

Just when the season was at its height the weather turned dry and day after day passed without rain. To see the flowers fading for lack of moisture was bad enough, but to make it worse there were four days of blistering hot winds which did more damage than weeks of cool dry weather would have done. The strawberry crop was burned to a crisp in a few hours' time and the white clover disappeared completely. The pastures turned brown and dry as autumn and no trace of the luxuriant clover remained.

In such localities not only was this year's crop ruined but much of chance of a clover crop next year was removed. So erratic was the season that good rains fell but a few miles distant from the dry areas.

The vagaries of the weather make it seem unwise for the beeman to invest too heavily in permanent improvements which cannot be moved. It is possible to move the bees and thus the beekeeper is in better position than the fruit grower who sees his crop destroyed without hope of saving it.

Ripe Honey

Many people imagine that honey must be kept on the hives till the season is entirely over, in order to have it well ripened. But it is only in damp seasons that honey remains unripe late. We have extracted tens of thousands of pounds of honey, within a couple weeks after its harvest by the bees and have rarely found it inclined to ferment. We have kept dozens of barrels of clover honey in a dry cellar, over several seasons without any loss of quality or fermentation. Unripe honey, however, is very objectionable; but the beekeeper soon becomes accustomed to judging of honey; there is no need of fear when one becomes accustomed to judging of it.

The place where honey is kept after extracting has quite a little influence upon its retaining its keeping quality. A dry room, located where the heat will prevent the absorbing of moisture, is the best storage room.

Honey Little Known to Public

A visiting engineer from an eastern industrial city comments on the fact that he seldom sees honey offered for sale except on roadside stands when he drives to the country. It takes pressure to keep any food product moving these days. National advertising and high pressure salesmen are behind so many products that the grocer has little interest in anything which is not consistently pushed.

The visitor who formerly lived in the Middle West and was familiar with the efforts of those who had honey for sale noticed its absence from the stores which he had occasion to visit in the East.

A little investigation makes it plain enough that there are millions of people in eastern cities who seldom see honey and the visitor ventured the opinion that many of them hardly know what it is.

In view of the fact that our product which was formerly a staple as commonly used as butter, has become so little known to the rising generation, it will require a consistent sales effort to reestablish it in public estimation. Retail grocers can hardly be expected to stock any item for which there is little demand. They want a good turnover to cover the high overhead charges necessary to business and to provide a profit. If the housewife demands honey they will soon have it on their shelves and this demand is only likely to come as a result of serious effort.

In neighborhoods where local beekeepers are wide awake and keep the merits of honey contantly before the public, the retail demand remains active. Elsewhere it soon disappears. If honey production as a business is to continue prosperous more attention must be paid to this problem.

Divide the Grades of Honey

The season for white honey, in this part of the continent, ends in July and the darker grades come a little later. So it is a good plan to extract the white honey, before the end of July. The fall crop is composed of buckwheat honey and of the different grades of late flowers, persicarias and golden rod, with a large number of fall flowers producing bright yellow honey. The persicarias, also called heartsease, smart weeds, etc., when blooming at the same time as sweet clover, make a very fair honey, which, although darker than white clover, is far less highly colored than golden rod and other late honeys.

Our beekeepers understand, however, that it is better to keep these honeys separate as much as possible; for that reason it is well to have an extracting period between the white and the dark harvests, and it is well to have it before the crop suspension which takes place between the two, to avoid robbing.

There is also an economy of labor to the bees, if we empty the filled combs so as not to compel them to build new ones or to use comb foundation. They are so much more prone to work eagerly when they have freshly emptied combs in which to store the new harvest.

Selling Our Crop

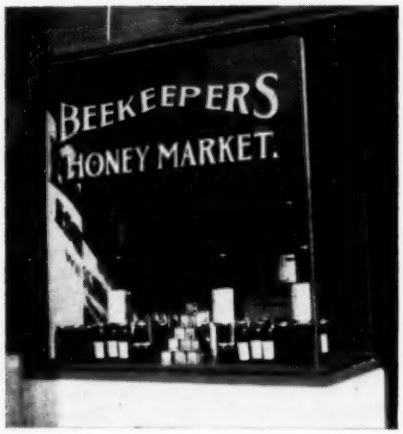
In some localities the new honey is already coming into the market. Since summer is the season of travel every advantage possible should be taken of the roadside stand as a place to sell honey. So many beekeepers are able to sell the entire crop at retail from such stands that it should encourage others to make similar effort. A well located stand on a main travelled highway is a splendid outlet for any fresh food. Fruit, vegetables, melons, eggs, honey and many other things are now sold in large volume from such stands. Here and there the sales reach the proportions of a good sized store and much of the stock has to be purchased from nearby farmers to provide sufficient to meet the demand. The sales will depend greatly upon the appearance of the package. An attractive container does much to help the buyer to decide.

Introducing Queens With Smoke

What has become of the smoke method of queen introduction which attracted so much discussion about 1916? Arthur C. Miller, of Rhode Island was the champion of the method and much space was given to it in the bee magazines of that time. How often it happens that some short cut attracts a lot of attention for a brief time only to be forgotten within a few months.

Ants

If you are bothered with ants locating themselves over the brood chamber or over the supers, under the cap out of the reach of the bees just put a little wood ashes in the space they occupy and they will leave. It is the same with their locating themselves under the bottom board. Sometimes they place their nest where you cannot well use ashes. Then use a thin film of coal oil right through the passage which they travel.



The Schad Brothers Build Their Market

By Pearl Haley Patrick
Missouri

A BIG honey crop needs a big market, so the Schad brothers, C. F. and W. Z., of Vermillion, Missouri, just packed theirs up and took it where the folks were. That is why Kansas City now has the Beekeepers' Honey Market at 3519 Troost Avenue.

This honey market will not only handle the honey from something like a thousand hives belonging to the Schads, but it will be supplied by their beekeeping neighbors and bee men in the Kansas City territory.

"Honey hasn't had a fair show," said C. F. Schad. "Merchants have not pushed it, and even yet to the ordinary person honey only means something you eat with hot biscuits. That's why a family may use three or four pounds of honey a year while they use a hundred pounds of sugar.

"We are trying to change that. We are training our salesmen to talk honey to the housewife. We have prepared an attractive leaflet of information and recipes, and this is given the housewife whether she places an order or not and we are sending the salesman with a sample right to her door.

"We believe that when she tries honey as used in our recipes she is going to use honey — a lot more honey."

The health angle of honey use is also stressed.

The Beekeepers' Honey Market has an attractive window display.

The gallons and half gallons are in tin, the pints and quarts in clear glass bottles. Tiny squares of comb are interspersed to attract attention.

A big point in favor of honey is the fact that it **will keep** in a warm place where it does not sour or ferment or mold. Many people do not know this.

The honey meringue makes a big hit whenever used, as it is quickly and easily made, needs no cooking and may be kept on hand always ready for use.

The honey butter is popular as a spread on hot waffles or bread, especially for the hurry-up breakfast where time is a factor.

Honey as a sweetening for grapefruit gives a delightful flavor and is easily spread on the chilled fruit if the honey has been warmed or taken from a warm place.

The Beekeepers' Market is boosting honey for health, for flavor, for the keeping qualities it imparts to baking — and, of course, for profit.

True it is, though sad, that honey, the oldest sweet known, Nature's own confection garnered from the flowers, a food of such ancient and honorable lineage, should need boosting in up-to-date America!

The ancients knew its worth.

When a land was greatly to be desired it was said to be "flowing with milk and honey."

John the Baptist seems to have grown so strong on a diet of "locusts and wild honey" that it was necessary to decapitate him to halt his successful career. But we seem to have felt it necessary to cut and crush and cook and refine cane and corn and beets to get our sweets, when we could just as well keep hands off and let the bee gather it from the beautiful blossoms and prepare for us toothsome delight, delicious, beautiful and wholesome.

Electrified Honey

By Ernest A. Ford
Texas

IT may be, that somewhere in the United States, there has been a similar occurrence, but in-so-far as I have been able to learn, it is a very rare happening. In fact, the beekeepers to whom I have talked say they never heard of it before. I am referring to a bee yard being struck by lightning.

During this past summer, early one Sunday morning, a terrific clap of thunder announced the fact that somewhere in our immediate neighborhood something had been struck by lightning. But it was not until several days later, while on one of our trips to the outyards that we discovered the exact spot this particular bolt of lightning had selected.

Our first thought was that some marauders had been in the yard and perpetrated this act of vandalism. If there were any bears in this part of Texas they would have been blamed. For as you can see by the accompanying photograph a very thorough job was done in scattering the equipment. Upon closer investigation we found where the lightning had split the bark on the mesquite tree around which the wreckage was strewn. The bolt of lightning or electricity in some form exploded the hive nearest the base of the tree and not a thing but the bottom board was left.

There were several other hives knocked over, and another hive had exploded and four combs left standing upright with enough bees and the queen with which it was saved and later built up to full strength. A great many of the wires holding the combs in the frames were completely burned up and the wax near them melted. Bits of frames and hive bodies were found fifty feet in all

directions. For such a lot of wreckage there was not such a large money loss, as much was salvaged.

In a short article for the local newspaper I mentioned the fact that perhaps these bees would produce "electrified honey," and I had many joking inquiries for some "electrified honey."

At any rate, I thought it rather an unusual occurrence and worthy of some publicity.

Editor York Recovering from Stroke

George W. York, well know editor of "Bees and Honey," had the misfortune to undergo a slight stroke on June 18th that had affected his left arm and left leg and put him in bed for a week or two. We are glad to report, however, that with his usual energy, he had his office desk brought from Alhambra to his bedroom where he continued his editorial work without serious interruption.

With the help of Mrs. York, he has been able to oversee the mailing of "Bees and Honey" and getting out the edition on time. He is getting along nicely now according to our information considering the stroke and hopes to be out within a few weeks and carry on his business as usual.

For twenty years, Mr. York was editor and publisher of the American Bee Journal and all that time he never missed a mailing day and now in his seventy-first year, he is still editor and publisher of "Bees and Honey" and in eleven years, has never missed out but once on the mailing of that publication.

For faithful service of this important kind, editor York deserves the friendly praise of all of us and we take this occasion to wish him rapid recovery from his temporary affliction. May he be with us many years yet and continue the good work which he has been doing for the beekeeping industry during the major part of an active life.

A Good Sport

A good sport plays the game of life according to the Golden Rule.

If he wins, he does not crow; if he loses, he does not whine.

He counts every experience a lesson he needed to learn.

He does not condemn what he does not understand.

He always gives others the benefit of the doubt.

He reverences both God and man; therefore cheerfully renders each what is due.

To him the one great disgrace is failure to carry on!

Not being afraid to live, he does not dread to die!

Lida Keck-Wiggins.

Logged-Off Lands a Paradise for Bees

By C. M. Litteljohn
Washington

Back to the land—logged-off land, if you please—is the movement gaining strength in the Pacific Northwest, aided by chambers of commerce and others in an effort to alleviate congestion in cities and unemployment there. Now, it has been definitely determined that this logged-off land is an especially desirable locale for the cultivation of the honeybee and the commercial development of apiaries, extraordinarily suited for such enterprise where there is the ubiquitous fireweed.

There are thousands of acres of newly burned-over and logged-off land in Cowlitz County for one location in Washington, which supply a natural honey plant in the beautiful fireweed which springs up among the stumps of fallen timber that has gone the way of all wood in the lumber mills nearby and is interspersed among the blackened trunks of trees left by the fire.

This fireweed nectar is highly prized by the insects which flock to the tall and beautiful plant, more like a flower of exquisite beauty than a weed. Yet they are so profuse that, probably because of their prolificness, their beauty is overlooked and their mere ubiquity stamps them as a weed.

In any event the bees take naturally to the fireweed that flares over the burned and logged sections. They swarm as to a festival, to sip their fill of the special fare; and as a result they produce one of the highest grades of honey in the world.

Is it any wonder, therefore, that the back-to-the-land movement grows in intensity in this section—especially with the new urge given through beekeeping? If the present ratio of bee cultivation is continued in Cowlitz County, Washington, it will rank as one of the major agricultural industries.

In a recent inspection of this county, Martin Pykonen, state inspector, found a 50 per cent increase in the number of hives over a year ago, there being 1500 hives owned by 112 apiaries in the single county, with a total honey yield in the county last year estimated at 65,000 pounds, with a value of $6,500.

But it is quickly pointed out that this is but half the sum a favorable year would represent, since only fifty pounds to the hive were yielded instead of the one hundred pounds to the hive in normal seasons. And while the commercial beekeepers secure the one hundred pounds to the hive, the amateurs take about sixty pounds.

Death of F. Eric Millen

A letter from J. A. Munro, of North Dakota State College, states, from correspondence from Dr. Phillips, that F. Eric Millen, Provincial Apiarist of Ontario, has passed on, the funeral being held at the Memorial Hall, at Guelph, Ontario on July 18th. We have no further particulars at this time.

Prof. Millen was a graduate of the Beekeeping Course of the Ontario Agricultural College under Morley Pettit and one of the first men to specialize in beekeeping in his college career and to follow up this special training.

Soon after graduation, he was selected to take charge of the beekeeping work at the Michigan Agricultural College and from there to Iowa Agricultural College at Ames as Assistant Professor in beekeeping.

He also maintained apiaries in Michigan and Iowa for commercial honey production and kept accurately in touch with the practical work in beekeeping. Following his appointment at Iowa, Prof. Millen returned to Ontario as Head of the Department at Guelph from which he graduated, where he has since been actively in charge of the beekeeping work at the college and throughout the Province. Millen was still a young man, and his passing is a distinct loss to Canadian beekeepers.

We may read the writings of poets and philosophers, but yet wisely, to cull out of them whatsoever is profitable; and so imitate the wittie bees, who whatsoever flower they gather of, with a singular wisdome suck out only that which is good."—Culled from an early writer by W. H. Hull.

Can We Afford to Clarify Honey?

(A REPLY TO MR. DILLON)

By H. S. Paine and R. E. Lothrop
Bureau of Chemistry and Soils,
U. S. Department of Agriculture,
Washington, D. C.

IN an article appearing in the May number of the American Bee Journal, Mr. Gordon P. Dillon questions, as a matter of policy, the advisability of attempting to develop the use of methods of clarifying honey. We agree fully with Mr. Dillon that there is need of bringing more effectively before the public the value of honey as a food, and that nothing should be done that might possibly jeopardize the public consciousness of the healthfulness and other valuable qualities of honey. We should go a bit further, in fact, and state that additional and more direct evidence to substantiate claims that honey possesses certain advantages as a food over "refined" saccharine products would be very helpful to the honey industry.

In the study that we have conducted relative to the colloidal constituents of honey, it was found that the extremely small quantity present has important effects on certain disadvantageous physical and chemical properties of honey, so that removal of this small amount of material from honey is definitely beneficial. For example, after clarification honey is brilliantly clear, is less liable to foam and form scum layers, does not caramelize as readily when heated, and does not granulate readily. Apparently then, if clarification can be accomplished by a simple method that involves only small expense and that does not impair the quality of honey in any respect, it should be of distinct value to the industry from the standpoint of improvement of appearance, better keeping quality, and extension of the use of honey.

Certain of the fears entertained by Mr. Dillon are based on the assumption that the method of clarifying honey referred to by us in articles appearing in this journal would remove some of the normal constituents of honey (for example, mineral matter) that may be of considerable importance as food accessories. For this reason clarification would tend to put honey in a class with "refined" saccharine products, and therefore would lower its value as a food.

The same thought has occurred to us, and we have therefore done a considerable amount of work in order to determine exactly what is removed from honey by clarification. We are, consequently, in possession of definite facts relative to this point and, as its chemical nature will reveal, the very small quantity of colloidal material removed by clarification has no appreciable food value; hence, its removal would in no way lower the value of honey as a food.

It is customary to strain extracted honey before it is packed in order to remove suspended particles, such as wax, propolis, parts of dead bees, or similar material. These particles are usually regarded as accidental constituents of honey. After straining, however, there remains an abundance of still smaller particles (termed "colloidal" particles) that are suspended through the honey. It has been found that in different honeys the quantity and chemical nature of these colloidal particles vary between rather wide limits, so it would appear that the presence of these particles in honey likewise is more or less accidental.

In most light honeys, the quantity of colloidal matter present, and therefore removed by the clarification process, is exceedingly small. This small quantity consists largely of pollen grain constituents, very finely divided wax particles, small quantities of pentosans (gums), and very small quantities of mineral matter (which for the most part consist of silica).

The proportion of the total mineral matter of honey which is contained in the colloids removed by clarification is so small that ordinary chemical methods applied directly to the honey do not detect any decrease in its mineral content after clarification. However, direct chemical analysis of the colloids removed by clarification shows the presence of a very small proportion of mineral matter, a leading constituent of which is silica (the chemical compound of which sand is composed). It is probable, from the evidence at hand, that the small quantity of mineral matter present in the colloids of honey consists essentially of particles of dust from the soil. This material, consisting in large part of silica, is relatively insoluble and practically indigestible and its removal is, to say the least, not detrimental. All but this very small proportion of the mineral matter of honey is present in dissolved condition and is not affected by clarification.

With respect to wax, it must be admitted that its presence adds nothing to the food value of honey, and although it appears to be an invariable constituent of the colloidal material of honey, the fact that the percentage of wax present in the colloidal matter varies so widely (2 to 25%) would indicate that its presence in honey is more or less incidental.

Since the quantity of pollen in honeys of different floral types varies between wide limits (Browne found pollen counts for different honeys to range between 123 and 5058), and no particular importance is attached to the quantity present in honey, the complete elimination of pollen from honey would not be significant. For instance, we do not consider that California orange honey, which contains relatively few pollen grains, is less wholesome than honeys which contain an abundance of pollen.

Likewise, the small quantities of other colloidal substances removed from honey by clarification do not impair its quality. There is no evidence that any portion of the colloids possesses a definite food value which, if removed, would detract from the value of honey as a natural, wholesome sweet. In fact, the honeys that are most in demand in the market usually are those that contain naturally the least amount of colloidal substances.

Clarification amounts essentially to an extension of the usual practice of straining out suspended matter so as to include the removal of the smaller colloidal particles present. In fact, from the standpoint of effect produced, clarification may be regarded essentially as a more efficient method of straining. The treatment does not change the chemical composition of honey to any significant extent. The clarification of honey is in no wise analogous to the removal of caffeine from coffee, which is one of the comparisons made by Mr. Dillon. The use of clarification for eliminating colloidal constituents is not considered objectionable in the case of maple syrup, grape juice, and numerous other products of similar nature from which small amounts of coagulated material and extraneous colloidal substances are customarily removed.

We are not at present in a position to recommend a definite procedure for clarifying honey, but hope to do so in the near future. However, this will not be done until careful consideration is given to the advantages and also any possible disadvantages which would result from its use. We do not wish to recommend, and most certainly will not recommend any method of processing honey that has even a remote possibility of reacting unfavorably toward the industry.

We may add that we fully appreciate Mr. Dillon's views in this matter, and are glad that they have afforded us this opportunity of stating our position relative to the clarification of honey as a matter of policy.

Red Ants and Italian Bees Stage Their Own World War

One of the fiercest and most deadly fights the writer ever observed was between a colony of large, red ants and a colony of Italian bees. The battle occurred on a bright summer day during a light honeyflow. All the colonies in the apiary were hard at work at 8:30 o'clock a. m., with one exception. That was a strong colony of Italian bees in a two-story hive.

The entire front of the hive was thickly covered with bees. Since no bees were hanging out at any other hives, this cluster looked like a swarm trying to unite with the bees in the hive, but a closer examination showed that the bees were protecting themselves from an attack of red ants. The fight must have been going on for some time, because the ground in front of the hive was pretty well covered with dead bees. But the most careful search failed to show any dead ants. The entrance to the ant nest was a hole in the ground about three feet from the hive. This particular colony of ants had been missed in the distribution of ant powder about the apiary.

As the fight was different from anything the writer had ever seen before, or since, a sufficient time was given to the examination before applying the ant powder, to discover, if possible, how the attack was carried on. One thing was very evident: the ants were not making a mass attack on the bees, but the bees had abandoned all other outside work and were making a mass defense of their hive. The number of ants did not seem to be more than ordinary, and in comparison to the number of bees clustered on the hive, the ants were very few in number.

What the red ants lacked in numbers they more than made up in ferocity. Each individual ant seemed desperately determined to fight its way through the mass of bees into the hive. With head up and jaws wide open, the ant would charge directly into the cluster of bees, to be met instantly by one or more defenders. During the observation not a single ant succeeded in passing the barrier of bees.

Whenever ant and bee came together, either one or the other of two things always happened: either the two fighters would roll off the bottom board onto the ground and fight it out or they would immediately disappear into the air. When the fight was conducted on the ground, the bee was always killed, and the victorious ant returned to the attack. What happened when the fighters took to the air instead of fighting it out on the ground, it would be impossible to say, but the fact that bees took the ants away from the hive whenever they could accounted for the entire absence of dead ants and the small number of live ones about the hive.

As far as could be determined without the aid of a magnifying glass, the issue of each individual attack seemed to depend on the advantage gained in the first grapple. When the ant got the advantage, the two fighters rolled onto the ground and that was the last of the bee, but when the fortune of war fell to the bee, she took wing immediately and carried her enemy for a last long ride. Whether the ant was killed or not, it was taken far enough away to be numbered among the non-combatants.

There is no telling how long the battle would have continued. There seemed to be a plentiful supply of ants. But as soon as the plan of attack was discovered and a sufficient number of fights observed to satisfy the most morbidly blood-thirsty, the beekeeper took a hand on the side of his bees and gave the ant nest an abundant dose of powder. By the time the noon hour arrived, all was quiet about the scene of conflict and the bees were busily engaged carrying in loads of nectar and pollen.

R. B. McCain.

The Passing of a Pioneer

MR. J. M. MUNRO
Champion Ontario Apiculturist

James MacAllan Munro, 75, pioneer beekeeper of Northern Ontario, died in Fort William, Ontario, July 3, following a month's illness.

The late Mr. Munro was born at Embro, Oxford County, Ontario, going to Slate River Valley in the late nineties. He was one of the first to introduce bee culture in the Thunder Bay district, his apiary being one of the largest in Northern Ontario at one time.

During his boyhood years at Embro, Mr. Munro acquired a keen interest in beekeeping due largely to his friendship with a neighbor beekeeper, the late Dr. George E. Duncan. Prior to leaving Embro with his wife and family for their new home in the North, Mr. Munro had built up an apiary of about ten hives. These he brought along on the trip. Not all of the colonies survived the first wintering experience but enough of them wintered through to be the nucleus of what later on became an apiary of nearly three hundred hives of bees.

Although alsike clover and wild raspberry bloom proved to be the most dependable sources for honey, Mr. Munro had the experience of securing on several occasions phenominal yields of water white honey from fireweed. In this Northern region forest fires occurred from time to time and always there followed innumerable acres of appropriately named plant.

Years ago the Provincial Department of Agriculture in recognition of Mr. Munro's success with beekeeping and his wide knowledge of the subject appointed him as special lecturer in beekeeping for the area extending from Port Arthur to the Western boundary of the province. The duties of this position included lectures and demonstrations on beekeeping before farmers' meetings throughout the many points of his itinerary. This position he held until two years ago when failing health caused him to retire.

During the course of his work he made many friends among the beekeepers he met. He was a close friend of the late F. L. Sladen, then Dominion Apiarist for Canada, and Morley Pettit, former Provincial Apiarist for Ontario and who is now engaged in commercial beekeeping. On various occasions these men visited Mr. Munro at his Slate River Valley home.

He is survived by his widow, six sons, James R., grain inspector, Fort William; John B., deputy minister of agriculture, Victoria, B. C.; J. Alex, state entomologist, Fargo, N. D.; Donald W., Port Coquitlam, B. C.; Dougald at Detroit and Russell at home, and five daughters, Annie C. Munro, medical missionary at Parlakimedi, India; Mrs. W. J. Morris, Port Arthur; Mrs. Clarence Bowles, Fort William; Ada, Port Arthur; Mrs. G. Cross, Slate River Valley. Eighteen grandchildren also survive. The funeral was held from the home of his son, James R. Munro, Fort William.

Honey Bees Pay College Fees!

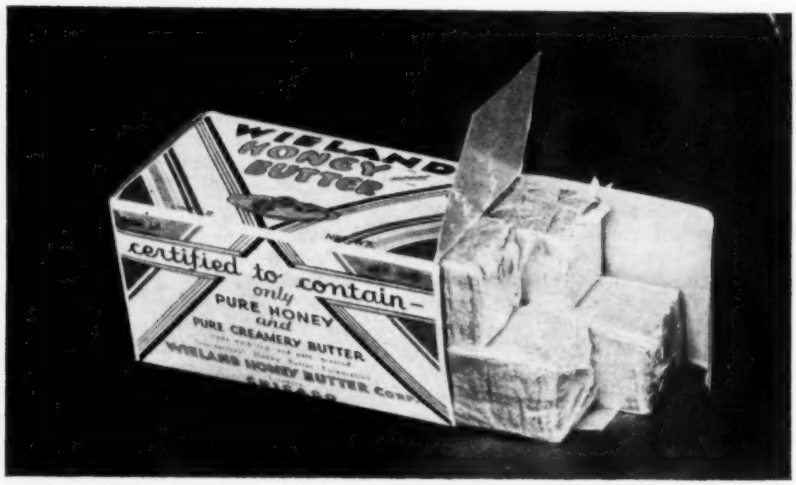
Clarence Dean, of Myton, Utah, substituted honey for money at Westminster college when Dr. H. W. Reherd, president of the school, took the golden product of the bees in lieu of tuition. Dean is shown on the right at the school in the above picture.

Dean's bees are buzzing him right through school and as long as the honey holds out the student does not need worry about college expenses. Boarding students at the college will eat honey during the coming year, and Dean will not only help them eat it but he will furnish it as well. Two hundred youths are enrolled.

Dean brings the honey to the school from his farm in Myton, Utah, on his father's truck shown above.

Glen Perrins,
Utah.

Honey Butter Sells in Chicago



The Wieland Honey Butter Corporation, organized to sell a standardized mixture of creamery butter and honey, has been merchandising this product in Chicago and the vicinity for about a year. They have used radio advertising, recipe contests, and general newspaper advertisements to build interest and repeat sales. The package shows how the honey-butter is packed. The product looks exactly like creamery butter and is furnished in quarter pound wraps in a regular butter carton. Honey and butter is one combination that beekeepers have wished to see merchandised for a long time and it is to be hoped that the Wieland Company will meet with success in this venture.

Do Orchardists and Beekeepers Need to Cooperate?

By W. P. Southworth
Iowa

Late in the afternoon of May 11th a neighbor beekeeper called urgently for me to come to his assistance at once with truck or any conveyance that would transport hives of bees. In reply to my inquiry as to why the urge to move his bees that evening, he explained that the manager of a large orchard near his apiary had sprayed the cherry trees while in the prime of bloom, and that his bees were dying by thousands, therefore in order to save any of the field bees he must move all of the hives before the sun came up again. With other neighbors I responded to his call and the bees were moved to a safe distance that night, but the ground where the hives had stood was strewn with little knots of dying bees that had returned from the cherry bloom too sick to enter the hives.

We have watched with interest to see what the cherry harvest would be in that orchard, because a former manager asked to have bees placed in the orchard and the hives distributed in all parts so as to insure thorough pollinization of the bloom. He was careful not to use any poison spray while there was bloom of any kind that would attract the bees.

I am advised that the cherry crop from this orchard was not worth the gathering and that the set of other fruit is small, but cherry trees at my home and in other places have yielded a normal amount of perfect fruit and free from worms, tho sprayed before trees were in bloom.

Michigan Summer Meeting

August 3 and 4 we have our annual summer meeting at the home of Oscar H. Schmidt, Bay City, Route 5. We have invited Mrs. Jensen to come and Ernest Root has promised to attend as President of the Institute. We will concentrate on a plea for support of the Institute and with the able support of David Running, Floyd Markham, Oscar Schmidt, Harold Albaugh and others, I know we can get somewhere.

R. H. Kelty,
Michigan.

When wax is mollified and wrought warme, then set the seale on it, for it will receive the impression. And when God hath in any wayes mollified our hearts, when we finde ourselves any whit softened, take the hint, improve the opportunity.—Culled from an early writer by W. H. Hull.

Let's Eliminate Price Cutting

By Chas. Brittain
Washington

WE have many discouraged beekeepers, however it is the writer's opinion that prospects are very bright in this branch of industry compared to many other farm products.

A large surplus of honey in the United States is a thing of the past and the work carried on by organized beekeepers is being reflected in increased consumption of honey.

Honey has been brought to the attention of hundreds of physicians who are advising their patients to use it, and under the educational program for the use of natural foods, honey is meeting the favor.

Cooperative honey marketing associations have been operating on a very small scale to date, but have been very valuable to the industry as a whole in finding new outlets, as well as effectively bringing honey to the attention of the public in a way that never before has been accomplished.

Experience has taught us that a small cooperative association that pools the honey of its members, cannot control prices. Price levels are affected more by low offers from individuals than by a small pool of honey held for better prices.

A more practical and effective way for commercial beekeepers to maintain better price conditions would be to market all their honey through one representative in each marketing area, thereby eliminating the price cutting among individuals. The reason that honey is so cheap right now is because there is little or no cooperation among the producers and they, pressed for immediate finances, offer their honey individually to packers at lower and lower prices. This system has kept honey prices as low as sugar notwithstanding there is a shortage of honey. In normal times supply and demand control prices, but during this depression, producers have been accepting almost any price so long as they could realize some cash. This condition is true, not only of honey, but nearly all other farm products, and yet the producers claim they are not receiving the cost of production, when in fact they will not allow the trade to pay them more. If it were not for the cost of freight they would at times sell for less than the cost of transportation. This is due to lack of cooperation and organization.

No legislation or government loans can mend these matters for the producers. It is a problem which they must work out for themselves and the solution is to combine their interests by organization. Just because some organizations have failed is no reflection upon any well managed cooperative.

Any season may bring an overproduction of farm products because there is no intelligent organization governing the production of crops. This is not so likely to be true of honey production because that condition would never come about unless it was stimulated by high prices over a period of years. The number of successful commercial producers is not large and it would take some time with a price incentive before we could reasonably expect the over-production that we had a few years ago.

Experience has proved that honey producers should organize on a general plan that will be elastic enough to better conditions of the majority and without hindrance to anyone. This seems possible. We should not feel discouraged if a plan does not work perfectly, in fact, if we can adopt a plan that will work 10% more to our interests we are making progress, because it takes a lot of educational work to induce producers to organize for the betterment of their condition.

Buyers themselves would certainly welcome price stabilization, for producers are continually contacting their competitors with lower and lower offers. Buyers have run such hazards from producer competition that carload buying is almost a thing of the past, unless the price is a sacrifice. The system now in effect, where each producer bids against his neighbor on the same product in the same market should be enough argument to convince an intelligent producer that organization is necessary if he expects to receive the cost of production or anything on his investment.

People have to eat and our population is increasing. Why is it that the producers of our food supply are so distressed? Is it not because they have failed to help themselves by failing to work together? The return of prosperity may have to wait until producers get enough for their crops to enable them to purchase some things they need.

If I buy a carload of honey it is quite probable that some other producers will sell my competitor a similar quantity for less, and if we sell on the same market I will lose; therefore, the price of all honey on that market is reduced and any producer who approaches me again will have to reduce his price or I cannot buy. The consumer will pay enough for the beekeeper to realize a profit, so will the packers, providing the producers will organize and stop giving their product away for less than its cost of production. I believe there are enough progressive beekeepers in every state to start a movement for an organization that will market their honey at a profit, provided they can cooperate with beekeepers of other states on a practicable program. This movement should be started at once throughout county and state organizations and if there aren't any such organizations, they should get together anyhow. The equipment for transportation, packing and delivering all your honey to market, as well as the capital to do so, is waiting to assist you and will return you a profit if you will supply the product you already own but should intelligently control through some active organization. No honey should be shipped to any market unless there is need of it, otherwise it enters into competition with ample supplies already on hand and reduces prices.

Because of the various kinds and qualities of honey produced in different sections of the United States, practical knowledge of marketing such honeys where they meet with favor is required, and it appears to be out of the question to put certain districts under the control of a central head. Beekeepers are widely scattered and are keenly alive to the requirements of their localities and a successful organization, operating on a large scale would have to depend on the cooperation of several groups working for the good of all.

No producer should be obliged to ship his honey when he has a market at home, and some plan should be evolved to avoid individual competition whenever and wherever possible. A practical sales outlet should be maintained in all marketing centers and this might be a reliable representative who knows the trade, such as a broker or a business firm already established.

Road stands or any new outlets for honey should be encouraged. They are good advertisements and beekeepers should not be so shortsighted as to consider them a menace because they enter into competition with stores. An attractive display of honey anywhere acts for the interest of honey producers.

We should all be able to imagine the immediate effect on price stabilization if every commercial producer would stop making offers to the large marketing centers and place his produce under the control of one sales representative. It is idle to talk and do nothing. Action should be taken at once by commercial beekeepers everywhere. Sales representatives should be reliable business firms able to give bond, and not some promoters who are after jobs and have everything to learn about business and merchandising. Beekeepers should profit from the experience of the past and not attempt to tear down the present system of distribution until they have had time to build up something better to take its place. Small beekeepers who have a local market

for their product should be encouraged to make sales at prices that will not cut under the prices of large distributors.

The writer has been manager of a honey cooperative for a number of years as well as having had some experience in the production of honey. Most of our beekeepers have no money and some are in debt. Now is the time to get busy so that they can realize something for their next year's crop as well as laying a foundation that will assure them a reasonable profit on their investment in the future.

Milk, Bread and Honey --Fit for the Gods

The reflections of a married man who is doing his own housework while his wife is away from home on a long visit may not always be suitable material for the public press, especially after the aforesaid man has wrestled with a refractory cook stove, washed dishes, made beds, swept floors, and tried to do a thousand and one other things that look so easy when his wife does them. But there is one line of thought that can be blazoned on the skies, and that is the commonsense idea of food value that is engendered in the mind of man when he undertakes to feed the beast—that is, himself.

Getting down to bedrock, he remembers that among the almost endless variety of food products, and their combinations, three articles of human diet stand preeminent. Two of these are nature's own finished products, ready for immediate consumption, needing neither cooking, flavoring, or processing of any kind. These two are milk and honey. The third is a product of thousands of years of man's ingenuity and inventive ability. It is bread, the "staff of life."

Milk and bread and honey. Taken separately, each of these three food products is wonderful; in combination, they are unsurpassed. A bowl of bread and milk and honey will be far better for the average man than the most elaborate bill of fare. No matter how long the old lady stays away—who cares, when he has food fit for the gods? Besides that, he doesn't have to wash so many dishes.

But, never fear, like little Bo Peep, the dear wife will come back, and with her will come a lot of new recipes, garnered here and there. Soon this philosophic old man, who meditated on godlike ambrosia, will be hankering after the "fleshpots of Egypt." And, because dear wife likes to keep the beast quiet, he will be eating meat and potatoes, flapjacks and hot biscuits, doughnuts, cake and all kinds of pies.

R. B. McCain, California.

Why Not a Swarm Box?

One of those one-minded swarms settled in an apple tree for me, quite within reach. Of course, I set a hive with drawn comb on top of a ladder which stood directly under said swarm, the old, orthodox method. Several shakings dislodged the bees all right, but they went always back to that handy branch. And every shaking made them madder.

The next day another swarm issued and this first outfit got so excited that they took wing again only to alight high up in a plum tree, spreading all over the main trunk. There was no way of getting them unless scraping them off. After considerable meditation I got my home-made frame-carrying box, put into it one frame of brood and sundry drawn comb. This was easy to handle. By means of a wire this assembly was hung on a convenient branch slightly below the cluster. A sharp rap jarred plenty of bees into this box, which was without a lid, and within a half hour everything was "quiet along the western front." So that is that, and a little thinking does do a fellow some good once in a while.

H. A. Insinger.

"Pollen" from Cows-- Believe It or Not

By H. E. Weisner
Arizona

Have any of our readers ever seen or heard of bees working on cows? Yes, I mean just that and at the risk of being classified with Baron Munchausen I shall relate an experience new to me and unheard of by all with whom I have discussed it.

Several days ago one of my Mexican neighbors came to inform me that my bees were "molestan las vacas muchas"—bothering his cows very much. Since the bees had been seeking pollen substitutes and working on fresh sawdust here for weeks, I surmised they were finding something over there, but upon questioning him I learned that the cattle were not being fed and had to get their own food on the mesa and, incidentally, our more distant neighbors' gardens, alfalfa patches and shrubbery at night, whenever they could get through or over a fence.

However, no prudent beekeeper will allow his bees to annoy his neighbors if he can prevent it, so I took a spray pump and a solution of crude carbolic acid with me, thinking that perhaps the bees were working on the litter in the corral and that by spraying the repellent around I would discourage them, but a surprise was in store for me.

There were about a dozen animals in the corral and about the head of each hummed a congregation of from a dozen to three or four times that many bees. They would alight and burrow into the hair of the cow, often going out of sight, and appeared to be collecting dust in the hair, perhaps the residue of perspiration.

The Mexican thought the bees were hungry and that by feeding them the trouble might be stopped. Of course, an up-to-date dairyman would have known what remedy to apply but these people were not up-to-date. They were very primitive. He said he was having great trouble in milking the cows and I did not doubt the truth of this statement for frequently an animal would decide apparently that the situation was intolerable and with a furious shaking and tossing of the head and lashing of the tail would charge to the other side of the inclosure, but the short and partial relief thus obtained was clearly not worth the effort for the bees would gather happily around and settle down to work again.

Not once did I see any indication that one of the animals was stung, although they acted about as they do when pestered with flies. Nevertheless, they were well aware of the bees' ability to inflict pain. I learned the cattle did not arrive home until about the middle of the forenoon, when the bees were good and ready for them—the nights and mornings being cold—and that the cattle were kept in the corral until late in the afternoon, which suited the bees perfectly.

I went home and brought back a small hand sprayer with which we were able to treat such animals as could be managed by roping and snubbing, but some of them were "muy broncho"—very wild—and we could not manage them with the means at hand, so the bees doubled up on them.

"As a man may eate too much honey, so pleasure itself growes loathsome and distasteful by immoderate use."—Culled from an early writer by W. H. Hull.

The Discoloration of Honey

By R. J. Ramsey
Department of Dairy Husbandry, University of Illinois
and V. G. Milum
Department of Entomology, University of Illinois

THE brown discoloration of honey which frequently occurs during pasteurization and storage makes it less attractive and decreases its market value. The delicate honey flavor of such darkened products is largely masked by the "caramel" flavor. This defect has been attributed to caramelization of the sugars found in honey. It has been said that the levulose in honey is especially susceptible to caramelization. However, recent work (4) on the discoloration of food products has suggested that caramelization plays no role in the discoloration of honey. The above study demonstrated that the discoloration and development of "caramel" flavor in some food products were due to a reaction between sugars and proteins, the aldehyde or ketone radical of the sugars condensing with the amino acids liberated during heating. During this reaction there are formed substances which resemble caramel in color and in flavor.

Preliminary experiments on the effect of heat on the discoloration of honey demonstrated that this defect must be explained on some other basis than true caramelization. Pure solutions of sugars in the concentrations normally encountered in honey could not be caramelized at any temperature used in the processing of honey. Even sterilization temperatures (250°-265° F.) failed to cause the development of any color. However, samples of honey sterilized at the same time were quite brown. The honey was frequently three grades darker after sterilization.

In order to determine the extent of reaction between the sugars and the proteins of the honey, a few drops of formaldehyde were added to the honey before sterilization. The formaldehyde has the property of tying up the amino acids and thus preventing their reaction with the sugar. The data presented in Table 1 show that formaldehyde will entirely prevent the brown discoloration of honey. In other words, these data show that the discoloration is due to a reaction between the amino acids and the sugars. (Formaldehyde is poisonous and cannot be used in food products.)

The rate of discoloration during processing and storage will depend upon: (1) the kind and amount of sugars present, (2) the protein content, and (3) the methods of processing and storage.

The Sugar Content of Honey

Sugars vary widely in their ability to form brown colors with proteins. Cane or beet sugar show very little tendency towards discoloration in the presence of proteins. Dextrose or levulose however form dark brown colors when heated in the presence of protein material. In some instances levulose is much more active than dextrose in this respect.

> We wish to call attention to the fact that Ramsey and Milum presented this paper to us before the publication of the work by Lothrop and Paine on the same subject. To keep the latter authors work in an unbroken series, however, it was published first. The discoloration of honey is a serious matter and readers will find much of interest in this article.

The principal sugars in honey are dextrose and levulose, both of which are very apt to form brown colors when heated with proteins. According to Browne (1), most honeys contain about 40 per cent levulose and 34 per cent dextrose. However, some honey (Tupelo) contains almost twice as much levulose as dextrose. Such honey would be expected to discolor more rapidly than normal honey, since levulose is more active in this respect. However, during this study a sample of Tupelo honey was found to be less susceptible to discoloration than some other normal honeys (Table 1). This leads one to believe that some other constituent of the honey is the limiting factor in color formation.

The Protein Content of Honey

Although honey contains very little protein material, experimental evidence has shown that proteins are the limiting factors in the discoloration of honey. Neufeld (3) has demonstrated that the protein content may vary from .03 per cent to 2.67 per cent.

The "protein" in honey may exist as very fine particles such as pollen or in true solution in the form of its decomposition products, the amino acids. A study of ten samples of commercial honeys from various sources has indicated that the free amino acids are responsible for most of the color formed with the sugar. The colloidal or finely divided protein material was removed by ultra filtration and found to be of little importance as far as discoloration was concerned. In these samples the free amino nitrogen was responsible for most of the brown discoloration. Unfortunately little is known of the amino acid content of honey from various sources.

It was interesting to note that the removal of the colloidal material by filtration removed a considerable amount of the aroma and flavor of the honey. Apparently some of the colloids carry a portion of the aromatic constituents of the honey.

Processing and Storage

Unfortunately the honey producer has little control over the discoloration of honey except by controlling the processing and storage. The discoloration occurring during storage is no different than that formed during processing, except in degree.

Heat has a marked effect on the rate of discoloration. During a study of the discoloration of a similar product it has been shown (4) that the color will depend on the temperature used in processing. (Table 2.) It may be seen from this table that the temperature of storage and processing are very important.

Table 1.—The Effect of Heat on the Discoloration of Honey

Honey Used*	Color Grade** of Original	Color Grade after Sterilization 250°—15 min. No formaldehyde	Plus few drops of formaldehyde
Ohio Sweet Clover	1.2	9.5	No Change
Illinois Clover	2.0	9.8	No Change
California Orange	2.5	9.4	No Change
California Cotton	3.9	7.9	No Change
Florida Tupelo	4.6	8.6	No Change
California Thistle	5.0	10.3	No Chahge
California Sage	5.9	10.4	No Change
California Alfalfa	7.0	10.6	No Change
California Wild Buckwheat	8.5	11.2	No Change
Illinois Fall Comb	12.7	13.8	No Change

* The two samples of Illinois honey were obtained from sections of comb honey by crushing and draining the honey without application of heat. The Ohio Sweet Clover was purchased from a honey exhibitor, while the remainder were commercial samples.

** An official Pfund honey grader was used to determine the color.

It was deemed advisable therefore to determine whether or not honey could be pasteurized and stored without any change in color. The data presented in Table 3 show that it is possible to pasteurize honey without any sacrifice in color or flavor. It has been previously shown (2) that pasteurizing temperatures as low as 130° F. will prevent fermentation of honey. However, it seems advisable to allow an appreciable margin of safety. Pasteurization at temperatures as high as 160°-200° F. is not only unnecessary but undesirable.

The discoloration occurring during storage may be prevented by keeping the honey in a cold room. Honey kept at 50° F. for about three months showed no noticeable change in color. Other samples of honey have been kept for two years at 0° F. without any discoloration.

The type of equipment used in the processing is very important. Honey should be heated only in water jacketed equipment which is well tinned or made of Allegheny metal. Heating over a direct flame is certain to cause some discoloration. During the heating process the honey should be well agitated to insure equal distribution of heat.

Table 2.—The Effect of Heat on the Discoloration of Sweetened Condensed Skim Milk

Temperature of Storage	Time required to develop a certain brown color
50° F.	No discoloration at all
100° F.	2160 hours
142° F.	51 hours
200° F.	2 hours

Honey should be promptly cooled after pasteurization if the delicate flavor and color are to be maintained. The cooling may be done by running cold water through the jacket of the heating vat while the honey is being thoroughly agitated, or by drawing it off in suitable containers such as milk cans and immersing them in cold water. The honey should be stirred well to permit rapid cooling. Special care should be taken to prevent recontamination with yeasts after pasteurization. All utensils with which the honey comes in contact after pasteurization should be sterilized with boiling water, steam, or some chemical sterilizer such as calcium hypochlorite. If the honey is placed in the final containers while still hot, or pasteurized in the final containers, it should be cooled by placing the bottled honey in cold water or in a cold storage room. It is desirable to cool the honey to room temperature as soon after pasteurization as possible.

Summary

1. The discoloration of honey decreases its market value and covers up the delicate honey flavor.

2. The brown color developed in honey during storage and processing is not due to caramelization but to a chemical reaction between the sugars and proteins of the honey.

3. The protein content of the honey is the limiting factor in color formation.

4. Honey may be successfully pasteurized at 140° F. without any change in color or flavor.

5. It is desirable to heat the honey no higher than 140° F. and to cool it to room temperature immediately after pasteurization.

References

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2. Dyce, E. J. 1931. Fermentation and Crystallization of Honey. Cornell Bulletin 528.
3. Neufeld. Reported by Leach, A. E. in his textbook—"Food Inspection and Analysis."
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Table 3.—The Effect of Heat on the Discoloration and Flavor of Honey

Time	(a) Ohio Sweet Clover Honey 50° F.		140° F.		160° F.		(b) California Orange Honey 50° F.		140° F.		160° F.	
	color	flavor	color	flavor	color	flavor	color	flavor	color	flavor	color	flavor
Control	1.2	good	1.2	good	1.2	good	2.5	good	2.5	good	2.5	good
1 hour	1.2	good	1.2	good	1.3	good	2.5	good	2.5	good	2.5	good
7 hours	1.2	good	1.2	good	2.5	car'l	2.5	good	2.5	good	3.0	car'l
24 hours	1.2	good	1.2	good	6.5	strg. caramel	2.5	good	2.5	good	6.8	strg. caramel

A Real Outdoor Home

By A. C. Burrill
Resources Museum
Missouri

We have had sent to us one of the largest outdoor combs of honey made by runaway bees I have ever seen. Here is the account:

"While out hunting in some of the Sullivan County, Missouri, hills, we found a rare specimen in the form of a bees' nest. This swarm of bees, having settled on two small thorn bushes, went right to work making honey. When we found them, there was enough comb made to handle ten to fifteen pounds of honey. The bees could not have lived through the winter, nothing in the way of shelter to protect them, and more than half the honey consumed.

"None of us being skilled in the art of handling bees, we decided to get rid of them the only way we knew — that was to smoke them. After about thirty minutes of smoking, the bees became angry and we could not get close enough to cut the sprouts off. We had an automatic shotgun in the crowd, so Morlan shot the sprouts off at the ground. The bees after a while calmed down enough for one of the boys to pick up sprout and all and race to a water tank and 'dunk' them a time or two.

"We brought honeybees and all to town. After getting in by the fire we had some trouble with the bees and had to get rid of them. We sprayed them with fly spray and called in all the natives. We put the nest on display at the city hall, and after hearing the remarks as to the unusual way of bees working, when we talked to 'old-timers,' we were glad to offer it to the museum."

The hawthorn sprout proved to be over three feet high and the combs were arranged to twin trunks somewhat as you would pick up a book on edge by the back of the binding, allowing the pages to spread fan-like to represent the comb. There were seven or eight combs, the center ones about 9x14 inches, and the outer ones not as big as your palm and almost at right angles, as a roof to shed rain, perhaps, but all too short.

Since the combs spread fan-like from the twin trunks, which were nowhere an inch apart, the bees must have tried to use them as top bars. Where the combs join, there is still a bee space by making the cells shallower to where the combs attach. The inner combs are remarkably regular except for the shallowing of the cells at the top. On some of the outer combs the inside cells are ridiculously shallow, not over two or three mm. deep. It seems to be worker-size cells with some irregularities. I have seen golden Italians build comb on stems of lonicera, but these were discovered and removed in a day or two, before the combs reached much over a palm's breadth.

I have also seen a small amount of comb on an orchard tree when inspecting bees, but have never seen so large a comb in series built outdoors outside of a hive, and some of this comb was quite old and dirty, as if it had been there a whole season or more. The honey itself must have aged more than one summer in the hot sun.

Another Pioneer Iowa Beekeeper Dies

We recently learned of the death of Mr. Baptist Beck which occurred this spring. Mr. Beck who lived at Guttenburg, Iowa, was among one of Iowa's oldest beekeepers although never a very large one. His place will be filled by his son, Carl Beck, who will continue with the bees.

A Million People and Four Beehives

THE picture of four hives is of a battery of bee stands located at the back of a residence in the geographical center of St. Louis on the fringe of the residential district in a million population area. For blocks around, the neighborhood is made up of family homes, each with some kind of a garden in the back yard and with a couple of city parks within the flight radius of the bees.

The bees find a continuous flow of honey on which to work and, of course, city honey is superior to country honey in flavor because of the greater variety of fragrant blossoms from which the nectar is obtained.—[Be-lieve it or not.—Ed.]

Two of the hives are Dadants. The last hive was requeened in August with a Caucasian queen. The behavior of these grey bees calls for comment. They are out earlier in the mornings and later in the evenings, and they soon take possession of scraps of combs and bits of honey laid out on a bench nearby. The yellow bees simply do not get a chance. During the summer this one hive gave two full supers of honey, eleven frames each. The second hive also gave two full supers; the third hive is a new one just started in September. On the right is a young colony that produced a full super and has another one ready to take off. The crop amounted to 120 pounds of honey!

The only expense besides the initial cost was for foundation. Next spring they will be increased to twelve and the locality would accommodate many more than that. Bees do not interfere in the least with household and garden activities, and there is no reason why anyone should not have his own private apiary in his back yard.

Paul A. Schroers,
Missouri.

Steak With a Delicious Flavor

A Honey Broadcast

By Oliver Hickel
Missouri

I, the Honey Man, have a secret ambition I would like to tell you about today. I wish I were an artist and had the power to paint a picture to hang in the hall of your memory, featuring the wonderful merits of honey so that whenever you wished, you could gaze on this picture and know that by the constant use of honey, you will have really tangible happiness.

Since talking about pictures, use your imagination and look back with me, the Honey Man, to the time when I was sitting with a group of men around a campfire on a cool frosty morning, after a long trip through the woods, waiting for the first call to breakfast. Even the memory of this day brings a keen sensation of delightful anticipation of the steak which the cook served us that morning.

You, too, can create a thrill for the family with this steak which is entirely different in flavor. I will give you this special secret recipe.

Before you start to fry your steak, prepare two tablespoonfuls of melted butter and mix with it one tablespoonful of honey and put into a hot pan and then drop in your steak. If you need a little more, use your own judgment. This combination of melted butter and honey seems to seal the pores of the steak and your family will marvel at its juicy tender delicious flavor.

I would certainly like to see you taste your first piece for you will always have a happy memory. The flavor of this steak is sealed in and only a happy memory remains until the next bite.

So that you may share in the Honey Man's contest the week of November 7th to 12th, National Honey Week, I will give a five-pound bucket of honey for the first prize, a three-pound jar for the second prize and a two-pound jar as third, for the most original recipe which is sent me on the use of honey.

In the meantime, those listening in, and who send the Honey Man this treasured recipe, I will announce the name and give credit for the one sent. Sharpen your pencil and send in your recipe so that the Honey Man will have the chance to keep his promise and test them out for their goodness. I will have a chance to tell you about some of them next week during a broadcast.

Parks Tells His Story

While on my way to deliver two skeps, one loaded with natural bee comb and honey, for the American Honey Institute's exhibit in the Straub Laboratories' booth in the food section of the Agricultural Building at the Century of Progress, my car was stolen and the skep with the honey was removed. This, of course, was immediately reported to the Chicago police station and as a result the incident received considerable publicity in several Chicago papers. One facetious reporter wrote up the loss of my hives and honey as follows:

Help! Police! Auto Thieves Take His Honey for a Ride

Lewis Parks puffed into North Avenue station early yesterday.

"Some one," he exclaimed, "has taken my honey for a ride!"

Police snapped swiftly into action. In only a few hours Parks' car was found, stripped, at Paulina St. and North Ave. He smiled significantly and suggested:

"I'll bet the thieves will be puffed up over their work."

Noting the officers' incomprehension, Parks continued.

"You see, my honey was in two century-old hives I was bringing from Watertown, Wis., to show at the fair. There were a lot of bees, too, and—heh, heh—they're awfully sensitive about meeting strangers."

An empty skep was left in the car, recovered thirteen hours later, and this was delivered to the above exhibit.

L. W. Parks,
Wisconsin.

What Value Color in Honey?

By H. A. Schuette

(Presented before the 54th convention of the Wisconsin State Beekeepers Association, Madison, December 8, 1932.)

WHAT is the value of color in honey? "Sales appeal" you reply, an answer which is probably correct in view of the rather common preference for colorless foods. For is not such the case with flour which we "refine," and often bleach to the point of whiteness, and of rice whose valuable brown skin, in which are lodged the mineral salts and the vitamins, is polished away in the milling process to suit the whims of practically all consumers but those in the Orient? And do not light honeys usually bring better prices than do the dark ones? Yes, it appears that in certain types of foods lack of color rates a higher score than does an abundance of it. Whole wheat flour and unpolished rice contain much more mineral matter, or inorganic salts, than do their "refined" counterparts. Honey, however, is one food which reaches the consumer in its natural or "unrefined" state. Cane and beet sugar, the first of which centuries ago replaced honey in man's dietary, are practically free of mineral matter. In fact they can claim to be almost chemically pure because in the manufacturing process of converting the juice of the cane or the beet to sugar, this constituent has been treated as an impurity, and refined out of them.

Honey's chief characteristic is not the quantity of mineral matter which it contains for this constituent does not, indeed, bulk large since it varies in amount from a few hundredths to less than one per cent. Yet there is need for more information on this subject than now is available, and particularly so since students of nutrition have discovered that certain chemical elements play a hitherto unsuspected role in man's well-being. Data on the quantity of mineral matter in honey are plentiful, not so, however, on the quality of that mineral matter.

Another reason why it is desirable to know more about this subject of mineral matter in honey is because of its relation to the present practice in merchandising this food. Honey is not usually sold on the basis of floral source, certainly not when it enters interstate commerce. This is a matter left to the discretion of the several States. They may require it if they wish. Rather it must bear a grade in which color, appearance, and freedom from generally recognized disagreeable flavors receive emphasis.

Although those who are conversant with the chemistry of honey may have long suspected that, as between a deeply colored product and one less so, the mineral content of the former will in general exceed that of the latter, yet experimental proof of this was wanting until recently. It is a question made important by the disclosures of our newer knowledge of nutrition, for it would follow from a factual demonstration supporting this suspicion that a deeply colored honey ought to be deemed superior to one of light color from the standpoint of nutritional value if the mineral content of the former should prove to be higher. When such an analysis was made in our laboratory—twenty-two honeys were examined—such was actually found to be the case. It was surprising to find that the elements iron, copper and manganese predominated in the mineral matter of the dark honeys. For our purposes, a clover or alfalfa honey was designated as a light honey, whereas any honey which was amber in color or darker was classified as dark.

Iron is important nutritionally because of its relation to the coloring matter of the blood. That coloring matter is called hemoglobin. It has a certain power of carrying the oxygen to the end that the quantity of this gas which the blood will carry is determined by the quantity of hemoglobin which it contains. We build that hemoglobin out of our food. It is a complex substance consisting of a protein (globin) and a pigment, or coloring matter. The latter, which is called hemin, is the active constituent which holds the iron in which the oxygen is carried. Hemoglobin has been described as a sort of handle which holds iron and presents it in turn to the air in such a manner as to make possible the absorption of oxygen. Oxygen is necessary in the functioning of our muscles, and the content of hemoglobin of the blood is an index of its ability to furnish this substance. It has been estimated that an adult needs about 15 milligrams (3/5000 oz.) of iron daily.

Copper in minute amounts has recently been found to be of the greatest importance in the nutrition of the higher animals in that it seems to unlock the therapeutic powers of iron in restoring the hemoglobin content of the blood of patients afflicted with anemia. The discovery of this fact was made about three years ago by Professor E. B. Hart of the University of Wisconsin under circumstances which were near-accidental. Professor Hart's experiments showed that iron, long accepted as beneficial in some cases of anemia, required the addition of copper to promote the action of the iron, but that the "iron" which he had been using so effectively in the treatment of anemias, contained traces of copper as an impurity. When this observation was traced to its logical conclusion it was actually found that the curative effect of the iron had indeed been promoted, or catalyzed, by the very small amounts of copper which it contained, one part of copper to sixty of iron.

Manganese, like copper, will be found in the bodies of the higher animals, but to be sure, in only very small amounts. We do not yet fully know the advantages of including manganese in the diet but enough is already known to deem it a valuable adjunct to that diet. Some investigators think that it functions more or less interchangeably with copper, or as a supplement to it, in assisting the formation of hemoglobin in the blood. While others, on the other hand, are of the opinion that copper alone assists iron in hemoglobin building, yet they find evidence in other connections to make plausible the view that manganese has a specific function of its own in the nutrition of animals.

With the foregoing statements as a background, we may now turn to a discussion of the results of laboratory experiments on the composition of the ash of honey. A fairly large variety of inorganic substances has been reported from time to time by various investigators throughout the world, but as before intimated, apparently few have attempted to correlate these substances with external appearances. From foreign sources it was suggested two decades ago that there might exist a relationship between the albuminous matter of a honey and the quantity of manganese which it contains. This was before the presence of manganese in foods was known to have any significance.

From our own experiments it became evident that the ash content and degree of pigmentation apparently bear some relationship to each other for the dark honeys were found to contain more mineral matter than the light colored ones. Quantitative relationships with respect to these two major color differences cannot be set up, of course, because of the fact that honey is never of exactly the same composition since it is seldom, if ever, gathered exclusively from one species of flower. When the data of a Swedish and Swiss chemist, respectively are reinterpreted along the same lines, this same generalization seems to hold.

In the light group ten clover and alfalfa honeys were found to have an average ash content of 0.06 per cent. The actual values lay between 0.04 and 0.16 per cent. Those in the dark group, which included among their

number Spanish needle, tulip poplar, and buckwheat honeys had an average ash content of 0.17 per cent with a minimum of 0.07 and a maximum of 0.52 per cent. The light honeys contained on the average 4.8 parts per million of iron and the dark ones 4 times as much. The average copper content of the first group was 0.29 parts per million, that of the darker almost twice as much. The situation with respect to manganese was interesting in that the latter ones contained an average of 0.3 parts per million, the darker ones 4.1 parts per million.

It is indeed an interesting observation that buckwheat honey, which in the competition for consumer preference and price is often handicapped by its dark color and a not so delicate flavor, should contain, in comparison with clover and alfalfa honeys, strikingly more manganese and copper or twenty and five times more, respectively.

An explanation for the conditions which are noted above may conceivably be found in the suggestion that the characteristics and flavor of honey are influenced to a marked degree by nectar and pollen. They, in turn, may very well vary in composition and quality according as the plant which produced them is affected by such growth factors as the meteorological conditions prevailing in its habitat and the nature and fertility of the soil, as it possesses some peculiar ability to utilize nutrient materials or thrives because of some unique mineral requirements.

Finally, the results of a later series of experiments dealing with this question of pigmentation relationships will bear summarizing. This time twenty-seven honeys were color-graded. Their content of nitrogenous matter, or protein, was then determined. When the color values were set down in one column and the nitrogen content of the corresponding honey in the other, it was found that there was a fairly regular progression in the data. In short, color, or degree of pigmentation, and nitrogenous matter, appeared to be related in some way in so far as the amount of each which is present is concerned.

Does color in honey stand for more than an appeal to the eye? In the light of the foregoing it would appear that it has not only this significance but probably, too, another one. Exhaustive research will be necessary to establish what is advanced now as an hypothesis, to wit: there apparently exists in honey a relationship between degree of pigmentation and the quantity of mineral matter, notably iron, manganese and copper, which it contains. Dark honeys, like "the forgotten man" are probably due for "a new deal."

Disease Spreads Worse Near Cities

By W. E. Stepp
Kansas

I NOTE in the October number the question, "How late can American foulbrood be cleaned up?" The way you answered it was correct. I have just cleaned up four cases, on the eighth of October, using my regular method as printed in your Journal of June. (Brush bees on sheet of paper in front of old box with two starters inside. Cage queen inside, leave twenty-four hours, transfer queen to new cage in a clean hive of wired foundation, put new paper in front of hive; smoke bees, dump them all from box on the paper, let them go in. Burn up diseased material, dig a deep hole, cover with dirt, scorch out hives carefully. Give a new young queen every time to treated colonies. Be sure she is good.)

Only, in this October treatment, I gave five days and then dumped the bees in front of a hive with six full combs of honey and two partly filled for a brood nest. I fed them three days before dumping them out of the box in which they were shaken, with a slow feeder, as there was no honeyflow.

In burning out my hives to sterilize them, I no longer use a blow torch, but have changed to coal oil. I use a three-inch flat brush and paint the inside of the hive and bottom with oil, set on fire and, when the wood is sufficiently charred to suit me, I put on the cover and let it roast. The job is complete.

As far as I can see, American foulbrood is on the increase here, as I have cleaned up twenty-four cases of it this summer for different people who asked me to help them out. I take these bees to a hospital yard where there are no other bees to disturb or carry off a load while I work with them. Also, I always treat them late in the day, which is still safer.

Before coming to Topeka, I lived in a small town where no honey was shipped in, and in these several years I lived there I worked considerably with other people's bees, transferring them out of old box-hives into standard equipment, and never found a case of disease. My old friend tells me it is still unknown there. Where I live now I believe I have traced the spread of disease to honey shipped into the city from other places. Much of this honey also is comb honey.

As I live right in the city, I see sections thrown in alleys and bees working on the honey left in them. In my own neighbor's yard I found an extracting frame thrown out after the honey had been removed. There were bees on it. I burned it up. Then I found out that the comb had come from a man who had been treating foulbrood four years in his apiary.

In another case I found where section honey was raised and sold at the roadside to many people from the city. The owners had up to twenty colonies of bees since 1922 and they had had foulbrood which had been treated every year, until their bees had dwindled down to six colonies, and upon examining them I found all of them diseased. They had several cases of section honey yet to sell and I advised them that I would clean their bees if they would not sell the honey; they should use this themselves and burn the sections, but not let a bee ever get to any of them. They agreed if I would only get rid of the disease.

With their help, we did the job right there, since there were no other healthy bees within two miles of them. Used my method as just given (full account in June number.) We sure had some bonfire, but we did a good job and there has been no sign of disease since.

I believe some way should be provided so that every beekeeper will show a health certificate and that honey should not be allowed in interstate shipments or in any shipments at all without this certificate attached, just as done in the case of queen-bees and package bees from the South.

If something is not done, I am satisfied that we are burdened with American foulbrood for keeps, as I see no other way out of it. Almost every beekeeper in the city here that I have helped has had from one to three stands of disease, but I have found very little of it in the country. I believe that the distribution of comb honey is worse in this respect than that of extracted honey.

Lower Rates on Beeswax

A lower classification on beeswax was put in effect on July 20th, 1933. Beeswax in less than carload has been reduced from first class to second class in all territories. Carloads are reduced from third class to fourth class in southern and western territories and to rule 26 official territories.

The above reduction amounts to a saving of practically 15 per cent and, of course, is of advantage to the producer.

A great many efforts have been made in the past by the beekeeping industry to secure a reduction but without success. It is very fortunate, indeed, that the above reduction has now been allowed.

A Plea for Mercy

By Forrest L. Meuret
Nebraska

THERE is one thing certain regarding beekeepers in general. We have a hard row to hoe. Perhaps not as hard as others, but hard just the same.

No matter what reform we wish to accomplish we must first determine its effect on the old bankroll. Since the writer has a reform which he desires to suggest he will first discuss the alternative and the economic effect.

In the May issue of the Journal, the writer pointed out that the grey races were better winterers, were more prolific and did not rob. He also pointed out a method whereby those runaway Carniolans could be kept from swarming by supplying the same conditions that prevail after swarming. The conditions were: first, a young queen; second, plenty of work and no chance to loaf. They require more room than other races.

The elimination of this one fault leaves them very near the "perfect bee." Most beekeepers have been disappointed in them simply because they lose their bees and consequently their honey via the escaping swarms. They actually produce more honey, when kept at home, due to the larger number of bees in each colony and their all-weather flying qualities.

Their wintering advantage can best be understood by an example found this very winter. Two apairies received essentially the same care and the same winter protection. Some of the colonies in each were not in the best of condition. They were about equal in that respect. One of them is headed by Italian queens. It shows a loss of 25%. The other is Carniolan and there is not a single dead colony.

Temperatures 31° below zero and the number of weak colonies contributed to the downfall of the Italians. The Carniolans were in no better condition to begin with. The writer has never lost a swarm of grey bees except one from starvation by his own neglect.

A light packing should keep these bees alive wherever bees are kept.

The U. S. Department of Agriculture describes a simple, inexpensive and efficient packing case that should furnish ample protection for any race. The bulletin can be obtained for the asking. These cases cost about one dollar per swarm. They last indefinitely. Four colonies can be packed in five minutes if the packing material is stored in the empty case a few feet behind the hive. Carniolans do not need that much packing in Nebraska.

A swarm of bees consumes less than twenty pounds of honey from the time brood rearing stops in the fall until it begins in the spring. If this were extracted from the brood nest it would be of poor quality. Probably worth less than one dollar.

A package swarm must also build up in the spring. They cannot be delivered in the north for less than $3.50. The labor in getting them started is as much as the labor of packing. Bad weather can upset everything.

Now here is the point of this article. It is much cheaper to run your colonies over than to practice the inhuman business of poisoning them and replacing them with packages in the spring. Perform a little addition and subtraction and figure it out for yourself.

Another angle is that you are destroying all possibilities of selective breeding. That is a very important feature. Its importance has not been overemphasized in the least in the recent articles by Dr. Watson.

In regard to the humane side of it, any beekeeper should get a bad dream by merely thinking of this unnecessary torture. Imagine if you can, the scene inside a strong colony as it is lifted bodily from the bottom and placed over a sulphur burning receptacle. They rush about, madly seeking an exit. Failing to find one they return to cluster about the queen. After far too long a time in this torturous smoke they weaken and fall. Their wings are singed off and their writhing bodies left to fry in the smouldering fire. Is there anything right or decent in this inhumane torture? No! Particularly in view of the fact that it is an extravagant waste.

Let us hope that those few beekeepers who practice this have not thoroughly realized what they were doing. Surely they do not, for what but a lover of nature would overcome the natural fear of stings and become a beekeeper and what nature lover could force himself to, knowingly and with no reason at all, perform this task of slaughter.

Up, beekeepers, and condemn it! Condemn it for your conscience's sake. Condemn it because it will give us a black eye in the opinion of the buying public with whom we have made an honest effort to create a good impression.

Merely calling this injustice to the attention of the proper officials should suffice to make it punishable by law. It cannot be kept a secret. They would not let us torture a horse like that. Why do they allow us to torture a bee?

Bee Experts for British Columbia

A plan was proposed in British Columbia gradually to select over the Province beekeepers whose experience and ability to assist others will carry the hall mark of a certificate. Any beekeeper who can pass the examination for the certificate as beemaster, will be eligible. The examination will be conducted by the officials of the apiary branch of the British Columbia Department of Agriculture and representatives of the British Columbia Honey Producers' Association.

Satisfactory proficiency will entitle candidates to a certificate as beemaster. The move is expected to benefit individual beekeepers and the commercial honey industry.

F. H. Fullerton,
Vancouver.

A Curious Pamphlet

Some fifty years ago and before that time, there were numerous people who claimed to discover streams of water under ground by the aid of a forked stick. Those people were called "water-witches." We now have a beekeeper who claims to find whether the queen of a colony is alive and well and to indicate the spot where she is within the hive by a similar process.

Mr. J. Couterel, of Lavardac, in Southern France, a beekeeper of ability, whom we visited in 1913 during our visit to Europe, has written a pamphlet of 16 pages, entitled "La Radiesthesie au Service de l'Apiculture." In this, he explains how, with the help of a pendulum, hanging freely at the end of a cord, one is able to discover a number of facts about a colony and especially whether the queen is alive and well and her exact location in the hive.

The explanations are too numerous for us to make any special quotations. Suffice it to say that the little work is a queer and astonishing renewal of the art of the "water-witch."

More Spray Poisoning

This office had a pleasant visit during June from Mr. Ralph Fisher in far off Yakima Valley in Washington, a 200 colony beekeeper who has had much trouble with spray poisoning from fruit spray. He reports the chief trouble is from the spray falling on cover crops of alfalfa and sweet clover.

The depression period has resulted in many orchardists being unable financially to spray properly and many orchards are even being chopped down. If the practice is prevalent it should mean less fruit and higher prices in the future.

Concerning Honey Candy

A good sign should be the first care of the man who wants to catch passing trade. This one, belonging to Gus Boehme, of Virginia, is adequate and effective, drawing in about $100 a year on honey candy alone, the candy selling at 50 to 60 cents a pound. It is the kind called "Honeydream"—comb honey cut into blocks and dipped in unsweetened chocolate. Mr. Boehme makes it himself. He has twenty colonies of bees, gets an average crop of fifty pounds per colony, and raises apples and eggs in addition.

Incidentally, I first heard of this honey candy from a man in Washington, more than a hundred miles from where Gus Boehme holds forth. My informant was not a beekeeper—merely a man who likes honey to eat. Which shows that honey candy has possibilities that may have been overlooked.

Walter H. Hull, Virginia.

"The Largest Beekeepers' Organization in the World" Why Not?

The organization of beekeepers is a subject that has had so much written about in the past seventy-two years that it is virtually impossible to say anything about it that has not already been said.

That there is unlimited power in organization is a fact that is known to all thinking people, and we have only to look at what has been accomplished in the political and business world by this means to have this confirmed.

It has been said that beekeepers are so busy talking to each other that they have not found time to talk to anyone else. To correct this we need a strong national organization and the American Honey Institute working in harmony.

To complete the budget required by the American Honey Institute, the beekeepers must contribute $1,305.00 either by donation to the Institute or by membership in the American Honey Producers' League, and this is for a minimum budget, which should be doubled, at least, if the Institute is to work for our betterment.

In the seventy-two years that we have had some semblance of a national organization, it has been officered by men who have had to depend on other means for their sustenance, and in many cases have jeopardized their incomes from this source, even though they have given of their own time. I refer here particularly to such officers as hold positions with our various state institutions.

It would seem that there should not be much trouble to get 25,000 beekeepers, out of our estimated 800,000, to join the American Honey Producers' League at the small sum of one dollar, or less than two cents a week. This would enable us to have a paid secretary-treasurer, who could devote his time to this only and not have to feel that someone might think he was trying to hold down too many jobs.

But what are the facts? Can any one of our beekeepers tell us when we ever had that many members in our national organization as individual members? To accomplish anything, our organization must have a large membership paying dues, and not merely affiliated memberships, but active and individual memberships.

One thing that holds back a great many is the fear that they may create a white collar job for someone. I will go on record as saying that all business owes its success to this so-called white collar job, and if some of the people who think this way could be induced to try this white collar job, I am sure that they would find it the hardest kind of work. Personally, I would rather work through the honey harvest.

Let's not criticize, but put our shoulder to the wheel and push for our goal, which should be "The Largest Beekeepers' Organization in the World."

A Hired Hand, North Dakota.

Just Look at This Man's Hat!

If you think bees are not friendly, just look at this man's hat.

Leo D. Harris, of Killdeer, North Dakota, is not a beekeeper but he does know a good picture when he sees it and when a friendly beekeeping acquaintance put on his bee hat the Harris camera clicked. Reminds us of the time-worn bee beards, the bee-made signs of ripe honey and other catchy bee tricks that please and mystify the novelty loving public. Good advertising, too. There is considerable showmanship to advertising. Remember the psychology of buying is often a reflex from a good laugh or a bit of amusement.

Moisture in the Cellar

By Fred W. Lesser
New York

YOUR editorial on "Moisture in the Cellar" in the January, '33 issue leads me to give my experience. For thirty-four years I have practiced cellar wintering and have had bees in no less than thirty different cellars during this period. Some were wet, some dry, some warm and some cold. I used to fear wet cellars but do not any more; in fact, I believe that bees will winter better in a wet cellar than one that is extremely dry. I have one cellar now with four or five inches of water under the loose floor boards, from a spring. The bees in this cellar always winter well and are quiet later in the season than bees in dry cellars. On three occasions, I have had the bottom tiers of bees drowned by water coming in the cellars during January floods. The bottoms of the cellars were moldy messes in the spring. But those bees which escaped the water wintered perfectly. They were so quiet that we would look under the covers to see if they were alive when we carried them out.

But, long ago, I discovered that one of the requisites of good wintering was to have upward ventilation in each colony. This, I think, is more necessary than ventilation of the cellar, unless too many colonies for the air space are in the cellar. We use honey boards on most of our colonies. These we shove back about one-fourth of an inch when we set the bees in. This gives enough ventilation and is not enough to let mice in. We never have moldy combs in any cellar when we do this. But, occasionally, when we have not done it, in a damp or cold cellar, we have had moldy combs. Many of the old time cellar winterers in this state used cloth covers in the cellar. A heavy burlap works well but, of course lets mice in. We have wintered some colonies with a sealed cover but with an inch auger hole entrance about one-half way up the front of the hive. This answers fairly well but is hardly enough in a damp cellar. In double-story colonies, if the top hive is shoved back one-fourth inch, that answers fairly well.

I have been very much interested in Mr. Corkins' articles in regard to cellar wintering. I believe he is right in advocating lower temperatures than have heretofore been deemed best. And, my experience (and that of others near here) with hive ventilation shows that he is on the right track in advising trials of it.

I still believe, that, in the proper latitude, cellar wintering is more economical than out-door wintering. A special cellar or cave at one side of the bee yard, three-fourths or more under ground, with a foot or so of shavings on the ceiling makes a good cellar. Here, we can put the bees anytime in November and forget about them till in March. Then put them out on a day too cold for flight and there will seldom be any drifting. We seldom lose a colony that has a queen and honey. Now, that the strictest economy in production must be practiced to make a profit, I believe that cellar wintering in northern latitudes will help.

The old masters, Hetherington, Elwood, Miller, Doolittle, Hoffman, and many others in this state must have been right in sticking to cellar wintering for their locations. Since their time, methods have been improved so that it is now much easier to winter perfectly in the cellar. In their time, it was thought best to leave the bees out until the last possible day, before setting them in. Now, we put them in at our leisure, almost anytime in the course of two or three weeks. They thought that a perfect day was necessary to set them out. Now, we sometimes put them out a week or two before they get a flight.

A well wintered outdoor colony is, no doubt, stronger in spring than a cellared colony; but, by the time the honey flow is on, there is not much difference. And, here, some seasons, a colony reaches its peak too early, so that there is no advantage in having them extremely strong early.

It Can Be Done--But You Must Make a Job of It

By George Gilbert

Some time ago I was in a local grocery store. A man came in and bought two things—a comb of honey and a pound of maple sugar. For the honey he paid about half the price of the maple sugar. The maple sugar bore on it a bit of printed paper on which were these words: "Pure Maple Sugar." The producer's name was signed, with address. The honey bore no printed words. It was just in its basswood section. Each product was clean, bright, inviting.

To produce the honey a beekeeper had to watch his apiary more or less all the year around and had several seasons of intensive work. He had to handle a product easily spoiled after being harvested. The maple sugar came from trees that take care of themselves, barring danger from fire, which is remote in settled regions and where the only fire in the woods is that which runs along the ground—of little danger to seasoned, mature trees that are not resinous in their structure. The maple sugar was produced by the use of equipment not to be compared with that the honey man uses, either for cost or variety. The skill required of each producer also is in favor of the honey man.

Each product was largely sugar. Each had a different flavor. For ordinary household uses, they could be used almost interchangeably. The maple sugar, turned back into syrup with little effort by the householder, could be used as a spread for bread, to make cake, or for all other purposes for which honey is used in the home.

Now, why did the maple sugar sell for twice the cost of the honey? Well, the maple sugar producers know how to market and they know how to protect their product from adulteration and from all tendencies to cheapen it.

There are all sorts of products put into the market labeled in such a way that the buyer is led to believe that they are made from honey, or partly so. Poor honey floods the market. The old lie that honey can be manufactured from sugar is permitted to go unchallenged in too many cases.

But try to market something that infringes upon the words "maple sugar"! You will think a swarm of angry bees is about your head and you without a bee veil! The maple sugar people are organized, and they back up with fight every move made against them as an industry. They are vigilant to detect frauds. Their product is standardized. You can go into a store and buy maple sugar and maple syrup and be sure you get what you order.

You can go into the same store and order honey for half the price of maple sugar or maple syrup, any time. You will get real honey in comb or containers. But some way it is not impressed upon you that it is pure honey. People in the honey business know it is pure, but few outsiders are sure of it. The maple sugar people, on the other hand, have impressed on the public firmly that maple sugar and maple syrup are maple sugar and maple syrup.

I think the honey folk can learn from the maple sugar and maple syrup producers. There surely is something to learn when the two products can be produced in the same regions, marketed right where produced and the one outsell and outprice the other, year after year. I don't blame the maple sugar folks for getting all they can for a good, honest product. But I do blame the honey folks for not learning how to get more for their own honest product. I am not in the honey game now, but I like to look around and see what I can see to interest "our folks" more in their own business.

New York.

A Depression Extractor

By J. M. Osborn
Wyoming

PREVIOUS to 1931 I used an 8-frame power honey extractor. The majority of my extracting combs are 5⅜ shallow size. Unfortunately, I had an extractor with 9½ inch baskets whereas a 12½ inch basket would have been preferable. The small baskets allowed only 8 frames to the load instead of 16.

The shallow frames are so quickly uncapped that the 8-frame extractor was not fast enough to take care of the uncapped combs. There was too much time lost in reversing the extractor and to allow the extractor to acquire top speed. Because of the rush at extracting time, there was undoubtedly some honey left in the combs which would have been removed by a more efficient means of extracting.

A radial extractor would have solved the problem but there was no demand for the old reversible machine and I could not afford to junk it and buy a new one. However, I was convinced that the radial type was the one I needed for my shallow frames so I transformed the reversible into a radial.

The new extractor now holds 24 frames, three in each of the divisions of the reel where the baskets originally rested. I spend much less time in handling the radial and I find the combs are dryer and there is no delay for by the time I get one load uncapped, the whirling load is ready to come out.

The first step necessary in rebuilding a machine this way is to remove the baskets and their hinge bolts. Next I cut a 2x6 in eight pieces, one for each division of the reel and mitered them at the ends, allowing them to lay flat on the bottom of the reel. This base is just the right height so that the ends of the frame come above the upper ring of the reel and are easily lifted out. The outside edge of the 2x6 at the ends brace against the outside vertical portion of the reel. Each end of the 2x6 covers ½ of the lower horizontal bar of the reel. The two ends coming together in the middle of each of these bars and fitting tight enough so that they brace themselves against the outside upright of the reel.

Next bore a hole through the end of the 2x6 to correspond with the hole in the reel which originally held the lower pivot of the basket. A bolt through this hole with a washer on the wood side will hold the base of the new radial in place. On this base I attached cleats, one on each side of the desired position of the comb, making four cleats for each division of the reel. These cleats should be beveled on each upper corner so as to come to a point at the top to allow easy access of the end bar of the comb while loading the machine.

The last step in the transformation is to attach cleats to the inside of the upper reel to hold the top bars of the frames in place. This may be accomplished by brazing metal blocks of the right width to the inside of the reel ring or by using wood blocks and boring holes through the metal band and using screws to hold them in place.

I have used this extractor two years and it has proven to be an efficient machine for shallow extracting frames. I would not recommend this change for one using deep combs as the machine holds too few combs and will not keep one person busy uncapping.

For our heavy grade of Wyoming alfalfa and sweet clover honey, it takes so much time to throw out the honey that a machine holding less than 45 deep frames is not efficient. The time necessary to centrifuge the honey is directly proportional to the depth of the comb except for one factor, that is the optimum increase in speed for the shallow frame load compared to the deep frame load.

The tension of the clutch may be much greater with the shallow frame load than with the deep one as there is not the weight of honey to break down the combs. Therefore, the shallow frame load may be extracted in much less time per unit of honey than the deep frame load. So an extractor with greater capacity in combs is necessary when using deep extracting combs.

For the honey producer in the inter-mountain area, using deep combs I would suggest a 45-frame radial or two of the 20 or 24 frame radials but for a producer using 5⅜ inch shallow combs, I believe that one 20 or one 24 frame radial will give maximum efficiency.

Hail Honey at the Fair

By C. M. Litteljohn
Washington

One of the most enduring of American institutions is the Fall Fair, the harvest of Honey as well as of other crops, which exemplify in striking degree the Economic Independence of this country, and how little we need Europe or any other section of the world when we can produce such agricultural splendor.

In a number of the state and regional Fairs this Autumn, as in previous years, honey sections will be created, and a wide variety of products of the bees feeding on diversified pasturage, will be spectacularly exhibited, to win blue ribbons and awards, as they score further honors for adept beekeepers.

While it is impossible to sum up the amazing number of fairs throughout every section of this rich (in agricultural and bee resources), and spacious land, yet it has been conservatively estimated that there are more than two thousand fairs held each year throughout the States and Canada.

In many respects such fairs are of far greater value than a college education. They serve indeed as educators of the masses, as inspiring spectacles in their entirety of the cornucopia of plenty that still is America. And no little of this is the abundance of the bees, the proud new products displayed in varying amber lights, and of a thousand delightful bouquets to the practiced palate, the experienced epicure.

Each year progress is recorded and the year's achievements summed up at these great gatherings of the people, the average American folk of a given locality or region, close to the soil that has produced the inspiring exhibits. Each year there is renewed boundless faith in American productivity, as the future is looked forward to with confidence, supported by a realization of the actual exhibits that stretch from booth to booth, and building to building—and the sweetest of these is honey.

"Propolis"

NATURE teaches bee-householders to collect propolis as a protection against enemies who would invade the sanctuary of their hives. Parents may get a good lesson here. The Good Book gives some very good advice about homely virtues with which if the home is protected, many foes to character may be kept out. Lovely word—propolis—meaning in the Greek "before the city"—a protection or wall set up before the city and the homes therein. Again, oh wise Mr. Bee, we thank you for your silent preaching! Propolis — love, purity, peace, kindness, understanding—these make up the cement of the spiritual propolis which will protect any household from all the foes of evil.

Lida Keck-Wiggins.

Illinois Beekeeper Passes

Mr. Lawrence Weiss, of Taylor Ridge, Illinois, passed away July 3rd, after an illness of one year. Mr. Weiss will be very much missed by the Rock Island County Beekeepers' Association, of which he has been a director for years and he also helped in the organization of this association. He was a very good worker.

S. F. Peterson, Secretary,
R. I. Co. Beekeeper's Ass'n.

from the Little Blue Kitchen

"Dog Days?"

The August days are dog days
  For luckless hounds who grow
So hot and weak and thirsty
  They "bite" good friends, they know,
And humans blindly dubbing
  Such conduct only bad
Conclude such frantic canines
  With rabies have "gone mad."

Sometimes, of course, poor doggies
  Go hydrophobia's way,
But many a time, I'm thinking
  That quite misjudged are they,
And that, if wisely "shaven,"
  Well-fed and "watered" right
That even in dread "dog days"
  Few would "go mad" and bite!

Lida Keck-Wiggins.

A COOL head often means a cool body.

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Better sit still and read a good book than to be constantly reading the thermometer.

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Good honest sweat is a splendid weight-reducer.

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Honey Lady frequently has letters from readers asking for honey-cooking advice, and while she is always glad to give it, she also frankly admits that she is equally glad at times for the useful information often gained from such inquirers. . . . Such helpful hints Honey Lady adores to pass on to Blue Kitchen readers. A case in point! A reader from New England wrote Honey Lady a little while ago, saying her doctor had put her on an all-honey (so far as sweets are concerned) diet, and she wanted some special cookie recipes, calling for honey ingredient instead of sugar. Honey Lady only too gladly sent off several particularly nice and well-tried recipes to her, and when so doing asked the lady just what her ailment is, and why her doctor has prescribed honey and no other sweetening.

Very graciously this reader, who asked to be nameless replied, and Honey Lady feels it will do "powah o' good" to pass along this bit of information to other arthritis or rheumatic-bothered folk. My New England lady said (she writes a lovely, feminine hand incidentally!) thus:

"I am on a rather strict diet for hyperacidity of the stomach and arthritis (or rheumatism). The joints of the fingers have been very sore and lame and are growing large from deposits forming around the joints. When you wrote asking me why honey had been prescribed for me, I was not quite sure which condition the doctor gave me this honey diet for, so I have now asked him and he said the honey diet was for both conditions. They are related, he says, and the stomach condition affects the joints indirectly. . . . I am allowed NO SUGAR, and I use honey exclusively for everything—on cereal, in Postum (I am forbidden tea and coffee) and to sweeten all simple puddings, and I mix a little honey with cream-cheese sometimes for sandwiches (the diet allows cream cheese or cottage cheese).

I have noted improvement in the three weeks I have been on the honey diet and feel encouraged . . . incidentally my doctor is very thorough and particularly good on stomach trouble. He says sugar turns to acid in the system, so that is why he does not wish me to have sugar, and does prescribe honey!

"Perhaps," the lady adds, "I might say something which would help Blue Kitchen readers a little more by remarking that my diet consists principally of cereals, whole wheat bread, milk, buttermilk, or sour milk, fruits (non-acid), creamed vegetables, fresh green vegetables (lettuce and celery every meal except breakfast). No red meat. Baked potato occasionally. No tea or coffee. Can have white chicken meat, mutton, Tuna Fish salad, and boiled, baked or broiled fish, but only two or three times a week. Doctor prefers I eliminate all meats if possible. Can eat eggs once in a while. No sugar at all, no sweets such as candy, pastry, jellies, etc. I am using honey exclusively for everything . . . . . "

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Now that August heat creates a thirst for a long, deep cold draught every once in a while, it is nice to remember that honey alone or a homemade mixture of honey and sugar syrup can be satisfactorily used for sweetening lemonade, and other fruit drinks.

Housewives who have their own frigidaires would do themselves a "wee bit favor" on torrid days by making up the honey-and-lemon, honey-and-orange, juice, or honey and any-other-juice mixture; placing it in a Mason jar and putting it into the frigidaire to chill. Then, when the sudden thirst arrives it will be a very easy matter to make a pitcher of delightfully cooling beverage. This will save even the few moments' hot work of cutting, rolling, squeezing, etc., in mid afternoon.

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While in New York City, Honey Lady learned of an Arabian-American lady, very hospitably and "mystically" inclined who chooses food and decorations in accordance with the color of a guest's birthstone—so sometimes there is "red" for rubies in the way of beets, cherries, strawberries, red cabbage salad etc., and sometimes everything is decidedly white for pearls and the like. An Arab WOULD do a thing like that, but it is not a wholly untenable idea at that!

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AND to give Blue Kitchen readers just ONE red-fruit recipe to be used any old time when "cherries are ripe" here is one that will make anybody's mouth water:

"Cherry Short Cake, Three-Tier"

The Pastry.

¼ cup butter.
Yolks three eggs.
½ teaspoonful salt.
1½ cups flour.
1 teaspoonful baking-powder.

The cherries.

1¼ pint pitted cherries, sweetened with mildly flavored honey, to taste.

For the meringue.

Whites three eggs, sweetened with ¼ pound powdered sugar.
1 cup chopped almonds.

Directions

For the pastry, which is to be made for this recipe into three layers, work the butter into a creamy mass, into which stir the egg yolks and the salt. Sift the flour and baking powder together and then gradually stir into it the butter, egg and salt mixture, softened with about a quarter of a cup of cold water and lemon juice (equal parts).

Divide the dough and spread into three shallow cake tins. Then beat up the egg-whites with the powdered sugar. Spread this blend over the dough, and, on top of each dough-round, sprinkle chopped almonds. Bake these rounds in oven for twenty minutes.

Then spread with layers of the cherries, topped with vanilla-flavored whipped cream.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

SUNFLOWER AS A HONEY PLANT

Will you kindly advise me regarding the following:

1. What value has Helianthus (common sunflower) as a honey producing plant for bees?

2. What value has it as a cover crop for supplying humus or any other element to the soil?

In further explanation of my reasons for these questions will say that here in the south where cropping is practiced only in winter months we need to do what soil building, or resting practices in the summer. Velvet beans, crotalaria, brabham peas and native grasses are doubtless the best in that the first three are legumes and store nitrogen for use of the succeeding crops.

However, sunflowers grow well, the seed is cheap, the stalk heavy and therefore should add all the humus necessary, if that element alone is deemed sufficient in a rotation plan.

If, in addition, it is of value to the bees, and the quality of honey is such as to make it a desirable forage plant, it could be used to advantage here.

Have just been wondering if you had any data on that subject from Kansas and other places where the sunflower grows naturally and in abundance. FLORIDA.

Answer.—1. Helianthus produces honey, for we have seen bees working upon its bloom. But we have never seen enough of it to pass an opinion on its value.

2. Similarly we know nothing about its value as a cover crop. But the size of its stems would seem to make it difficult to plow it under as a fertilizer of the soil.

Those matters would need some trial in order to pass upon the possibilities.

INCREASE

1. I have fifteen stands of bees and I am going to buy queens and requeen the most of them. I have some that are very strong. Would it be all right to take three or four frames from the strong hives and give them a queen for increase? I know that the most of the working bees would go back to the old stand, but could I feed the new stand so they could raise enough bees between now and cold weather? MISSOURI.

Answer.—You can divide some of those best colonies and in order that the combs of brood and bees that you remove may be sufficiently nourished, I would advise you to put each of those divisions on the stand of another colony and put that other colony in a new spot. In this way you will make one division out of two colonies, one furnishing the brood and the other the working bees.

If any of those colonies do not make enough to winter, you can easily help them with some combs of honey from the wealthy ones or from sugar syrup.

FEEDING HONEY FROM BEE TREE

1. My brother-in-law and I are planning to cut a bee tree some time in the next few days that has had bees in it for the last eight or ten years, and of course, are expecting to get some little bit of honey out of it that is old, probably too old to eat, and I just want to ask if it will be all right to feed the bees on to pull them through the winter and build them up for the spring.

2. What do bees "burnish" wood for, or what is their object, is it any sign of anything they are going to do, or a sign something is wrong in the gum? I shall appreciate it very much if you will answer these questions for me as I am very much interested in bees. I have at present only two colonies, but expect to increase my number in the spring and want to learn a lot about them, and what their movements indicate. NORTH CAROLINA

Answer.—1. If you cut a bee tree and want to transfer the bees into movable frame hives, send us 10 cents for our phamphlet on "Every Step in Transferring Bees." The honey in that bee tree will be all right to us and will be good to eat if extracted out of the old combs with a honey-extractor.

2. Bees burnish the wood about their hive to make it smooth. They usually cover the rough parts with propolis.

You had better have a bee book. I am sending you a list of useful books.

BITTER HONEY

I have on hand about five hundred pounds of extracted honey, which has such a bitter taste that I can't put it on market for sale. Will you, by return mail, tell me if there is anything I can do to take this bitter taste out?

Also tell me if there is anywhere I can have it analyzed and see what the bees get this bitter material off of.

NORTH CAROLINA.

Answer.—The honey you complain of was produced by a plant which grows wild in your section, the "bitter weed" the scientific name of which is "Helenium tenuifolium." We believe that it is out of the question to take this bitter taste out of the honey. The only thing it is good for, in my opinion, is to feed the bees for winter. If you harvest good honey in the fall, you might extract it and feed this bitter honey in its place. We are quite sure that it will not hurt the bees.

As for an analysis of this honey, we are unable to tell you who could do it or whether it would be possible to modify it. You might write to the U. S. Apiarist, Mr. Jas. I. Hambleton, at the Bureau of Entomology, Washington, D. C. He might be able to help you out and he is very accommodating.

DISEASE FROM SWARM

If I catch a stray swarm do I run a risk of bringing disease into my apiary?

CALIFORNIA.

Answer.—If the swarm in question is a real swarm, from an oversupplied hive, there is very little if any danger of its bringing disease into your apiary, for the following reasons.

First, a hive swarms only when it is overpopulated and consequently healthy.

Second, the swarm has nothing that can carry disease, except honey in the honey sacs of its bees. This is likely to be fresh honey recently harvested from the blossoms and very unlikely to contain germs of disease.

The only possibility of disease would be if the swarm in question were a runaway swarm from some depopulated colony.

LOCATION

I am writing to you in regard to moving to a good bee country. I would like to locate in a country where the average per colony will run around 200 pounds a year. In reading one of your magazines I saw where there were localities that averaged from 160 to 190 pounds for several years. Canada is also good in parts but do not know about the sale there. I prefer to remain an American. Mr. Wesley Foster, who was former State Bee Inspector, has told me that he thought such a location could be secured in the Dakotas and other places.

I came here as a boy and worked for a beekeeper with 700 colonies. Worked for several others with as high as 1400 colonies. Went from helper to charge of bee yards. Then run 300 of my own, bought a home and paid for everything from the bees. So realize my life work is with the bees. Sweet clover that grows wild here has disappeared and alfalfa is now cut before the bees can do any good. So we are ready to move and start over again. They may have about cleaned us out in the last few years, but still have the experience and knowledge left and know that we will ,and can make good. I am forty years old now and have two husky boys to help me. I am one of the last to stick here as they have moved away or gone broke. I am enclosing a Colorado Honey Producer's stamped and addressed envelope to me as you request in the Editor's Answers, as this is the only envelope that will fit in. I think that I will lease first to see how the country agrees with us. With good references I do not think it will be hard to secure bees at present.

COLORADO.

Answer.—There are plenty of good locations for bees, but it is out of the question to mention one to you, as the good places are usually occupied by practical beekeepers.

I believe a number of good places may be found in the vicinity of Boulder. I would advise you to take a trip around among your beekeeping friends and look for such a location. Within two or three miles of a spot, one may find both worthless and excellent locations. Do not rely on any one but yourself to find such a location. Of course, you may improve it by planting honey-yielding plants after you settle there. That is what I would do if I were in your place.

CLEANING AND STORING HONEY

1. What is the best method of cleaning propolis from sections of comb honey?

2. What is the best method of storing comb honey? If it is removed and immediately cleaned and wrapped in cellophane wrappers will it be subject to damage by wax moths?

3. Some people are unable to eat honey because of severe stomach pains caused by it. Why does it affect them in this manner?

ILLINOIS.

1. To clean propolis from sections of comb honey, place the section on a level sheet f paper, on a board, and clean it with a sharp knife. If wanted very clean, use sandpaper.

2. Comb honey should be kept in a warm dry room. If it has not been exposed outside of the hive, wrapping it in cellophane paper it will be preserved against wax moths. But if it has been exposed to them, it will not be protected by cellophane and will have to be watched.

3. I am unable to tell what ails the people who are made sick by eating honey, but it is probable that if they eat a very small quantity at first, they will overcome the stomach antipathy to it. I would recommend that they try it.

CONDITION OF BEES

1. I transferred during fruit bloom of this year and I would like to know if my bees are doing what they ought to. They have all eight frames filled out with brood and honey, but they are not occupying the supers yet. Perhaps that is due to the honeyflow. The honeyflow has been good here so far. Do you suppose they will expand into the supers this year?

2. How much packing should a person use for safe out-door wintering in West Virginia?

3. I requeened one hive this summer and they have only about four frames filled with brood and honey. Is that queen doing good enough? They were weak when I requeened that hive in July. This is my first year's experience with the movable frame hive. I sure love beekeeping. I aim to try and get a hundred colonies together if luck is good. Send me a sample copy of A. B. J. if this is not asking too much, and all the information available. WEST VIRGINIA.

P. S. (4.) Is later than August too late to requeen? WEST VIRGINIA.

Answer.—1. If your bees have filled their brood chamber and did not go into the supers, it is probable that the season has not been very favorable. It may be also that they did not have all their brood combs built up early and so did not breed as much as they should. They will probably be in good shape for next season. It is doubtful whether they can go into the supers yet this summer. They might do so if you have a good locality for fall flowers.

2. It does not require much packing for winter in your section. But the colonies should be sheltered against cold winds.

3. If the colony which you requeened was weak at that time, it is quite probable that the queen is not to blame and that they will become strong in time.

4. No, August is not too late to requeen if you give the colony a laying queen.

BIG HIVES—CLEANING COMBS

I am operating fifty colonies of bees as a side line. I have very little time to devote to these bees. I have been thinking of increasing to 125 stands. For the last twenty years I have been working with bees. Nearly all of the colonies are in 10-frame hives with 10-frame extracting supers. These bees are wintered out of doors with no packing. Some with one, and some with two-story hives. Usually in the spring, when colonies are strong, I raise the brood to a third story, leaving the queen with two frames of brood in lower body over which is placed an excluder, then a body of combs and the raised brood in the third story. An augur hole in the third story keeps everything above the excluder clear of drones.

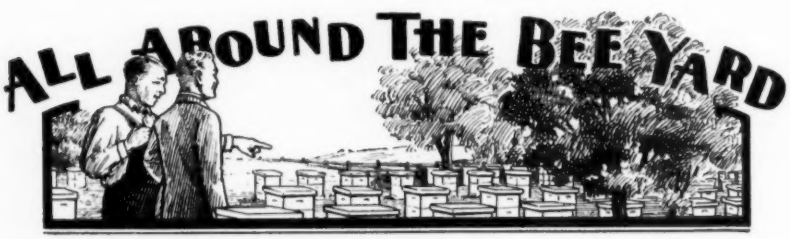
I have always wondered, more or less, about the Jumbo System and what advantages, if any, there would be for me to use large hives for brood chambers.

I have a couple cases of American F. B. What is your advice in getting my wet extracting combs cleaned up for extracting? Usually I place these out of doors and have a free for all clean-up. KANSAS.

Answer.—We prefer the larger hive because there is room enough for the queen in one story. Besides, there is usually enough honey above the cluster in winter for the bees to stay there without having to move. We use a hive of the same size as the Jumbo, with the difference that its combs are one and a half inches apart om center to center, which gives also more room for honey in the brood combs than the regular one and three-eighths. These are small matters but beekeeping is all composed of small matters.

If you have foulbrood, you should treat it very carefully or burn up the colonies that have it.

As to leaving the extracted combs out to be cleaned in the open, you cannot do anything worse for it will cause the bees to rob and they will never do as clean a job with those combs as if you kept them on top of a hive.



By G. H. Cale

WE'VE been absent a month with good reason, too. Day by day work in the bee yards—supers going on, honey coming off, queens being introduced. Every morning back to the same job for another day in a different yard until, to emerge again at the desk, seems like entering a different world.

Charles Dadant used to say "The seasons follow each other but do not resemble each other." And how true that is! Each year we try to find a comparison with other years and never quite manage to do so. In some respects, this year resembles three or four past seasons in respective particulars but nevertheless it is a season of strict individuality.

Over abundant rains in the spring made yard visits uncertain over dirt roads, yet brought on a splendid growth of clover. There followed a drought of dangerous length during which the clovers in many places bloomed and withered. Locally the drought was broken by heavy rain, five inches falling in one night, reviving the white Dutch clover enough so that bees have stored at least an additional super from this source.

Sweet clover has been an able drought resistor and, freshened by the following rains, is still yielding at this writing (July 21); enough so that all white honey has been removed without robbing and a super left with each colony with the hopes that it will be filled before the white clover yield is entirely over.

— o —

Our hats are off to Mr. Mratz who wrote in "Gleanings" about the use of chemically pure carbolic acid sprinkled on cloth frames to remove honey. For two years this has been successfully employed to remove extracted honey in all our yards. At first we were fearful that the honey might absorb some of the strong carbolic acid odor but it has not done so and the bees are so easily driven from the honey that, with a crew of four men to work, a yard of fifty colonies can be stripped of four supers per colony in about three or four hours.

We have found that by using an ordinary clothes sprinkler top to fit into a bottle of full strength carbolic acid, it is easy to saturate a canvas nailed to a frame with full strength acid. Only a few shakes is enough so that bees can be driven down through one and sometimes two shallow supers. About a dozen frames are used and placed on the hives in a row. The honey is then removed from the first hive as far as the bees have been driven out and so on through the row and over again until all the honey is off and placed on the truck.

— o —

We have also found that ordinary fly spray used on a cloth thrown over the honey will usually keep off robbers when there is no honey coming in sufficiently to allow quite a fair sized load to be gained before leaving. It is always better, however, to take off the honey before the robbing has started.

— o —

This year we have tried introducing queens after the flow started to wane and have found that acceptance is much better than when the flow is at its height. In introducing queens to the last three apiaries on a waning flow, we have only lost one queen for certain and another doubtful colony in which no eggs were to be seen.

— o —

We do not remove the paper covering over the candy hole of queen cages but break the paper just enough to give the bees a start when they begin to gnaw the rest of the paper away. The colonies requeened are let alone for ten days or longer before examination. This seems to increase the percentage of introduction. So few queens are lost that we make little attempt to make second visits to make sure of acceptance. Colonies in which queens failed to be introduced are sometimes given a second queen if there is enough brood still emerging. Often they are treated as hopelessly queenless and disposed of.

— o —

Up until now we have practiced requeening as a continuous process, requeening colonies whenever there was a sign of failure in egg laying or in laying habits. However, we have been urged this year by others who have practiced annual requeening to try that method. I wonder if anyone knows which is the best way?

Frozen Fruit Frappe

½ cup crushed pineapple, ½ cup chopped bananas, ¼ cup honey, 1 pint gingerale, ¼ cup lemon juice, ½ dozen maraschino cherries, use any other fruit desired.

If fresh fruit is used, chop very fine. If canned fruits, cut in small pieces. Season with lemon juice, sweeten with honey, add the gingerale. Freeze to a mush. Serve in sherbet glasses and top with a spoonful of whipped cream.

Mrs. Benj. Nielsen.

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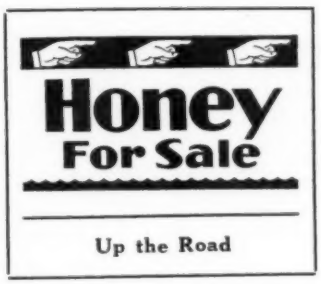

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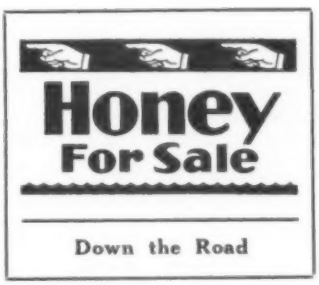

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Prolific at all times, very gentle, best of winterers, build up rapidly during the changeable weather of spring, build beautifully white combs, and most excellent workers. One customer reports an average of 435 lbs. per colony, extracted, spring count, for the whole yard of over 50 colonies. Have supplied many state Agricultural Colleges and Experiment Stations in U. S. and Canada with them. My own and Jan Strgar imported strain.

Prices both races:

1 untested queen	**$ .50**
6 untested queens,	**2.75**
12 untested queens	**5.00**
Tested queens, each,	**1.00**

August is a good time to do general requeening or to replace old and failing queens and those cross ugly colonies with gentle bees.

ALBERT G. HANN
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Wanted Shipments of Old Combs for rendering into Wax.
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Package Bee Prices on Page 226 in June Issue.

Our "Honey Girl" Italians are known in all parts of the country and our customers praise them very highly.

From Turloch, Calif.—"about the queen you sent me last year beg to state she proved a dandy with beautiful uniformly marked bees. The County Bee Inspector was here the other day and bought her for a breeder. I hated to let her go but as cash is very hard to get these days, I let her go at a fair price. I want to get 5 selected untested queens." —W. A. Holmberg.

From Washington, D. C.—"On the 8th of April you sent me nuclei, and I want to tell you how much I like them. They are just wonderful."—Nelson E. Brown.

From Ontario, Canada—"Your shipment of 25 queens arrived today, delighted with their condition and quality. The queens I got from you last year, all did remarkably well, sincere congratulations on your strain of Italians. Please send 20 more."—D. Palmer.

Large enough to serve you promptly, yet small enough to give your order personal attention. Service—Quality—Satisfaction.

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MEETINGS AND EVENTS

Inspection Continues in British Columbia

Despite reduced government grants, provincial apiary service is still being carried on in British Columbia and A. W. Finlay, Provincial Apiary Inspector, is at his work in the province.

The appropriation for apiary inspection this year is only $4000 as compared to $5500 last year. The following plan is being used: One full time apiary inspector for the province, A. W. Finlay, whose headquarters are at the Courthouse, New Westminster. He will have twelve district agriculturists and in addition the seasonal services from May until August of four apiary inspectors. The four seasonal inspectors are J. F. Roberts, Kelowna; W. J. Sheppard, Vancouver Island, with headquarters at Victoria; H. Langton-Johnson, Chilliwack; and E. R. Freeman, Surrey.

Because the Fraser Valley area is especially difficult in disease control because of the numbers of suburban residents who keep bees as a sideline, a full time inspector is located in New Westminster and two seasonal inspectors also. The latest available figures give the total number of registered apiaries in British Columbia as 2961, 240 new names being added since last year. The total number of colonies of bees is 22,000 and the last honey crop was in excess of 1,000,000 pounds.

Commercial honey producers in increasing numbers are moving towards the alfalfa areas in the interior of the province and the clover areas of Fraser Valley. Probably the largest individual commercial beekeeper is W. H. Turnbull with 1500 colonies throughout the Okanagan, Nicola and Fraser Valley.

The worst trouble in the best honey producing areas of the province is the spraying of fruit trees in irrigated districts and the poisoning of bees. Some beekeepers have had to move their bees. Max H. Ruhmann of Vernon has been studying the problem and hopes to attain a 100 per cent repellent to be mixed with the sprays.

In 1931, of nine prizes offered at the Imperial Fruit Show for colonial honey, B. C. captured six. In 1932, out of thirteen prizes B. C. honey won nine. Commercial beekeepers of the Fraser Valley, the Okanagan, Thompson Valley and Cariboo districts and the Kootenay area are cooperating with Inspector Finlay to repeat this performance or to better it for this year's Imperial Show.

W. H. Fullerton,
British Columbia.

Crop and Market Report

Compiled by M. G. Dadant

For our August Crop and Market Report, we asked reporters to answer the following questions:

1. How big is the crop?
2. How is the quality?
3. Prospects for balance of season.
4. Any new honey selling? At what prices?

Crop

Generally speaking, there has been a great disappointment in the honey crop up to July 10 throughout the entire country. Prospects which were earlier so alluring have not turned out half so good in view of the hot winds and dry spells which have occurred in many sections. In the New England states, we find much less than an average crop in all cases except perhaps Connecticut which has been doing very well with the early crop. New York reports about half a crop.

In Maryland, the crop so far was practically normal but in the entire Atlantic Coast region, the results have not been gratifying averaging from 50 to 70 per cent of a year ago. Georgia, of course, has very much more than last year on account of the extreme failure but only about 70 per cent of an average crop. Florida, however, reports excellent conditions and is one of the chief states which is above average. As a matter of fact, Florida, Tennessee, Missouri, Arkansas, Michigan, Minnesota, Western Iowa, parts of North Dakota and possibly certain sections in Idaho together with the Canadian provinces are the only places which have been reporting anything like a good yield of honey.

The entire South is far short of a yield except in some sections of southern Mississippi and southern Louisiana. Texas has only about 60 per cent of a flow and throughout the entire Texas region, the possibilities are that a normal crop cannot be made up. It is in the central West, however, that the disappointment has been greatest. In the section extending from Pennsylvania through to Iowa, there were excellent prospects for a white clover flow which started out in magnificent fashion only to fall flat by the three weeks or more of hot weather during June. As a result, many sections are not having 50 per cent of a crop and only a few are reporting something like 100 pounds to the colony. There were some local rains which have made excellent yields in some sections and, of course, the late rains have helped throughout most of the regions.

The same proposition holds true considerably in the plains states. Nebraska, Kansas and South Dakota had excellent possibilities earlier only to see them squelched by dry weather. Only late rains can save these regions from anything but a very short crop. Michigan, except in the northern most regions, is having a very excellent crop but Wisconsin although not approaching last year's failure, is far short of normal. The sweet clover regions as usual are going to be pretty well off. The dry weather has hurt but in most sections just recently rains have fallen so that the prospects are coming back in pretty good fashion. This especially applies to northern Minnesota, northern and western North Dakota and the Canadian provinces. In the southeastern part of North Dakota and in South Dakota, the crop has been very seriously hurt.

When we get into the intermountain region, Colorado of course will have more than a year ago because she had no crop then. However, normal will not be reached and we question whether it will be reached in any of the intermountain territories unless it would be perhaps Utah and certain sections of Idaho. Eastern Montana looks good.

We failed to mention Arizona which perhaps had 75 or 80 per cent of a normal crop earlier in the season.

California is another state which had a great disappointment as the prospects earlier were for a very fine crop which did not materialize. In fact, we question whether there will be 50 per cent and maybe not over 30 per cent of a crop throughout all of these states. Washington, Oregon, and northern sections of Idaho and Montana still have their crops to come. In the Canadian section except Ontario which is not having anything like a bumper crop, in fact far below it, prospects are good with the flow just developing.

Quality

The quality of honey is ranging far better this year throughout the country than it did a year ago. We think this is due largely to the fact that the flows this year, such as we have had, have not been "draggy" flows but rather a quick flow from one source and the beekeepers are thus able to keep the different honeys separate. Of course, if the rains materialize, there may be considerable mixed honey later on but it looks like the earlier flows have been segregated and quality above usual.

Prospects

The prospects are only fair in the New England States and New York as they have had extremely dry weather which, of course, not only cut the early crop but made it questionable as to what the later crop would be. If rains have fallen previous to July 20, it may be possible still to harvest a fair crop from the later sources. The honeyflow is just about over in the Atlantic Coast region without very much possibility of any great change through copious rains but only the possibility of bees building up in good fashion for winter. This applies pretty generally to all of the southern states with rain meaning the difference between a failure and a surplus, particularly in the cotton producing sections of Texas and other southern states.

Where the rain is going to do the most good is in the sweet clover regions, if it comes. Many of our reporters stated that the honeyflow this far had been negligible but that prospects were excellent provided the rains came in sufficient time to keep the sweet clover blooming straight throughout the season. It is our opinion in view of whether reports coming in during the past week, that this has happened in many sections and the sweet clover crop will yet be saved and may in many instances become a bumper crop, especially in the northern sections.

In the intermountain region also, of course, the crop is in the making with prospects perhaps just about as usual or in some sections perhaps a little better. In California, the flows are mostly over and in the Pacific northwest only just beginning.

New Honey Selling

Very few reports as to new honey selling except in California with a suggestion that the new honey is selling for shipment abroad at an advance of from ½ cent to one cent per pound. One or two reporters also suggested they were going to get at least one cent per pound more than previously and we understand that many of the orange producers although offered 5½ cents are holding their orange honey from 7 to 8 cents in view of the short crop.

There is one thing which is decidedly true, however, and that is that the cleanup on the old crop honey has gone forward at very encouraging prices. We know personally of one purchase of amber honey in large quantities which took place at one cent per pound higher than the same honey could have been bought for not over one month ago. This shows the tendency, we believe.

It does look like this is a year when it might pay not to be too anxious to dispose of the honey crop. In other words, if a satisfactory price cannot be secured, rather than sell at a sacrifice, perhaps it would be as well to wait developments. We feel very sure that the crop is not going to be anything like a heavy one such as had been anticipated earlier in the season. The condition of sugar has advanced rapidly, honey should stand similarly. At any rate, we are not going to approach the lows of the past season and we have every reason to expect an appreciation in values in honey as well as other products.

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GOLDEN Italian queens that produce good workers and gentle to handle. Satisfaction guaranteed. Select tested, $1.50. Tested, $1.00. Untested well worth 75c, now for 50c.
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GOLDEN Italian queens, 30 cents each, any quantity. Good honey producers and gentle. A. M. Kelly, Bell, Florida.

CARNIOLAN and golden queens. Tested, 75c; untested, 50c. Bees 50c per pound.
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FOR SALE—Pure Italian queens, red clover kind. 35c each. 3 for $1.00.
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GOLDEN Italian Queens, noted for their gentleness and honey gathering. One, 50c; 6, $2.75; 12, $4.50. Satisfaction guaranteed in U. S. and Canada. Health certificate with each queen. E. A. Simmons Apiaries, Greenville, Alabama.

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LARGE YELLOW NORTHERN BRED ITALIAN QUEENS, producing practically pure yellow bees. Breeders chosen for gentleness and honey records. Twenty years' experience. See June ad. Select untested, 75c. Select tested, $2.00. Standard guarantees.
Dodge Alexander, Station G, Toledo, Ohio.

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CAUCASIAN QUEENS from Bird's Apiaries that are Caucasian. Northern, gentle, honey go-getters. No longer any excuse for poor crops. My, what a difference good Caucasians make. Select untested, 60c balance of season. Odebolt, Iowa.

UNTESTED QUEENS, 60c; six or more, 50c each. Allen Latham, Norwichtown, Conn.

HARDY NORTHERN ITALIAN QUEENS, 30 years' experience, personally reared, honest dealing. One queen, 35c, four queens, $1.00. If I can't fill your order promptly, I will write you immediately. Quality good as any. No disease.
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FOR SALE—Thirty tons Michigan's finest Clover Honey. Sample ten cents.
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FOR SALE—White clover honey in 60-pound cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

HONEY FOR SALE—Keep your customers supplied with honey. We can furnish white and light amber honey at attractive prices. Packed in 60-lb., 10-lb. or 5-lb. tins. Dadant & Sons, Hamilton, Ill.

FOR SALE—Northern white, extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

TUPELO honey; will not granulate. Shipped in any quantity. Anthony Bros.' Honey Co., Apalachicola, Fla.

HONEY—We sell the best. Comb in carriers of eight cases each; extracted, basswood, buckwheat, sweet clover, white clover and light amber. A. I. Root Co. of Chicago, 224 West Huron St., Chicago, Illinois.

CHOICE Michigan Clover Honey. New 60's. David Running, Filion, Michigan.

FOR SALE—Well ripened, extracted honey gathered from clover, carlot or otherwise. Will be pleased to submit sample on request. Also section or shallow frame comb honey in local shipment. Colorado Honey Producers' Association, Denver, Colo.

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A. G. Kuersten, Burlington, Iowa.

HOWDY'S HONEY—White, clover extracted in sixties, ready for shipment. Also baking grade. Howard Potter, Jr., Ithaca, Mich.

NOW ON HAND, new crop, Clover Honey. Case to Carload in new 60-lb cans and cases or in any way you wish put up. Sample free. W. S. Earls & Son, New Canton, Ill.

FANCY COMB and extracted white clover honey. Write for prices.
A. J. Wilson, Hammond, N. Y.

HONEY AND BEESWAX WANTED

WANTED—A car or less quantity of white honey in 60-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, 816 Hazel St., Birmingham, Mich.

WANTED—Car lots honey; also beeswax, any quantity. Mail samples, state quantity and price. Hamilton, Wallace & Bryant, Los Angeles.

WANTED—HONEY and BEESWAX. Beekeepers will find it to their advantage to communicate with us. Please send samples, state quantity available and prices. CALIFORNIA HONEY COMPANY, Hamilton & Company, Agents, 108 W. Sixth Street, Los Angeles, California.

WANTED—Mixed car comb and extracted honey. Dillon, Fruitridge, Mich.

WANTED—Fancy clover comb and extracted honey. Give full particulars.
Ellsworth A. Meineke, Arlington Heights, Ill.

WANTED—Carlots or straight truck loads of HONEY, cash on delivery. You will find us a most desirable outlet for your entire crop as we are the largest packers of fine honey in the Middle West. Send samples and prices. Payments made through the First National Bank of Chicago.
W. F. Straub Laboratories, Inc.,
5520 Northwest Highway,
Chicago, Ill.

WANTED—Comb and extracted honey, state price and condition.
Earl M. Alexander, New Paris, Ohio.

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BARGAIN LIST—Extractors, brushes, smokers, veils, box seats, feeders, section presses, shipping cases, bulletin boards, covers, excluders, frames, etc. Every item in good, usable condition. Priced to sell quickly. Reason for selling, no longer listed in our catalog. Stocked at various points. Write for free list. G. B. Lewis Company, Watertown, Wisconsin.

SPECIAL DISCOUNTS on all tin and glass honey containers.
Schultz Honey Company, Ripon, Wisconsin.

SPECIAL—24 section select basswood Comb Honey Shipping Cases, complete K.D. at $18.50 per 100. Send for complete price list today. Northern Bee & Honey Co., Box 54, Osceola, Wis.

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BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Association, Denver, Colo.

PORTER BEE ESCAPES save honey, money, avoid stings; faster most efficient. Sample 15c. R. & E. C. Porter, Lewistown, Ill.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, $1.00; two years, $1.50. Sample, 3c stamp.
The Beekeepers Item, San Antonio, Texas.

SAVE queens. Safin cages now 15c. Ten for $1.00. Allen Latham, Norwichtown, Connecticut.

THE PINARD NAILLESS queen shipping cage. 810 Auzerias Ave., San Jose, Calif.

MISCELLANEOUS

PLANS FOR POULTRY HOUSES — All styles; 150 illustrations. Tells you the type to build for your particular locality. Secret of getting winter eggs, and copy of "Inland." Send 25c. Inland Poultry Journal, Spencer, Indiana.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership of the Club, including subscription to the paper, 10/6. The Apis Club, Brockhill, London Road, Camberley, Surrey, England.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so, send us a list. American Bee Journal, Hamilton, Ill.

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Systema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price $1.00.

What About Low Prices?

By Carl Kalthoff
Missouri

HONEY prices have dropped exceedingly low since 1929. So have the prices of other products. Wheat is claimed to be the lowest in 300 years. No doubt that honey today is selling as low as it ever sold in the history of commercial honey production.

In back bee journals, published from 1911 to 1918, on the market pages, the prices quoted for honey in carloads is 3 cents but the low price for all time no doubt has been reached in the present depression. Recently a market report quoted honey at 2 cents in carload lots and there are instances where honey has been selling at 30 cents in 5-pound pails, and 50 cents for 10-pound pails. I do not think that it has ever sold that low before.

With these conditions, beekeepers are asking what the consequences will be. Will there be a better demand for honey in the future? I think there will be. Is there a better demand for honey at the present low price? I think there is. More people are buying honey today than ever before. The price has induced many to buy who had never thought of buying until now. They could not afford to buy honey at previous prices. Another thing, extracted honey production has increased and is coming to the front more and more. Comb honey is not selling as well as it used to sell.

I started to keep bees in 1921. In 1924 I sold my first crop of comb honey. I started as a producer of comb honey and received 25 cents per section for it. It sold well. No trouble to dispose of it. Grocers were eager to buy good comb honey.

In this first experience I noticed that there was very little extracted honey in the stores in my town. In fact there was very little honey to be found in any of the stores, even comb honey. The fact was it was not hard to sell good comb honey, but grocers would not buy extracted honey. They said they could not sell it. People would not buy it. Most people suspected extracted honey to be adulterated.

A few grocers had tried to sell extracted honey but could not move it because at that time people were making good money and they were not so particular about the price asked for things they bought as long as the quality was there. Comb honey looked better than extracted honey, so they bought it.

In 1927 I produced my first extracted honey. Then I had a time

(Continued on page 325)

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CRYSTAL CLEAR
HONEY JARS

Display your honey perfectly. Dependable service on standard sizes. Hart fluted honey jars are made to specifications of Standardization Committee of the American Honey Producers' League.

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FREE! 1000 Real Queen Bee Souvenirs FREE!

To the first thousand World's Fair Visitors answering this advertisement and sending us the names of five or more beekeepers owning 25 or more colonies of bees we will give in exchange for the few minutes of your time, one of our fine "MAGNOLIA STATE" Italian Queens Free and Postpaid.

SELECT UNTESTED ONLY—WITH THEIR LIVES BEFORE THEM.
Purity of mating and perfect laying guaranteed.

PRICES:

Single Queen, 35c. 3 for $1.00; 12 for $3.60; and 100 for $27.50

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"For your honey's sake support the Institute."

GET RUNNING'S QUEENS —THEY SATISFY AND GET HONEY

The kind WE use in our extensive Michigan Apiaries where WE produce honey by the carload.

Accredited and certified ITALIAN stock, bred for honey-getting and gentleness.

Price—One, 40c; 3 for $1; 100 for $33.

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True Label Characters

Designs that compel attention.
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Our labels and selling helps meet these requirements at reasonable prices.

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American Bee Journal
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Are reared to possess Quality. Seventeen years' experience enable us to rear queens to suit the most Particular beekeeper. They will compare with any queens on the market Regardless of price. Our customers tell us so. A trial order will convince you where to get your future queens. ENTIRE SATISFACTION GUARANTEED.

50c each; 6, $2.85; Dozen, $5.40.

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We are Cash Buyers of Honey and Beeswax
Submit samples and best prices, freight prepaid Cincinnati
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Mott's Northern Bred Italian Queens
PRACTICALLY NON-SWARMING

75c each. 25 or more, 70c each. 50 or more, 65c each. Guaranteed purely mated or a free queen, means tested in the end. Ask for list with testimonies. Satisfaction guaranteed.

E. E. MOTT & SON, Glenwood, Michigan

When Writing Advertisers Mention The American Bee Journal

News Notes of American Honey Institute

Subscriptions

Subscriptions to the American Honey Institute have been very slow. Unless beekeepers come in with their memberships, there will not be enough money from the supporting members until October 1st to continue the Institute during August and September. Beekeepers who can do so should send their pledges to American Honey Institute early. Remember it is easy. Look up the list of honey receivers. If you cannot send money you can give honey on the basis of 20 pounds per ton of production; more if possible.

Because of the lack of funds, Amercan Honey Institute has just had to turn down a second invitation to demonstrate honey at the Century of Progress. Thousands of dollars have been paid to set up a model kitchen at the great Fair to show products and equipment and American Honey Institute is unable to send a demonstrator to take advantage of invitations to use these already established kitchens because of the lack of funds. One was from the Straub Laboratories, Chicago, and the other from the Home Service Director of the General Electric Company, Electric Refrigeration Department. Invitation of the latter comes from Miss Nolan to conduct demonstrations of honey in one of the General Electric kitchens. A $30.00 expenditure would make it possible to demonstrate honey at the Century of Progress for one week, but without funds the invitation must be turned down.

French Lick Springs Hotel Serves Honey

The manager of French Lick Springs Hotel writes the American Honey Institute that the honey items have been popular at French Lick. Particularly honey drizzled grapefruit which is carried on the menu and has boosted the sale of grapefruit more than twice its former volume.

The Ladies Home Journal Features Honey

Jean Simpson in Ladies Home Journal writes about frostings. She recommends honey and maple syrup. In the April issue of the same magazine, Lita Bane, under the title of "Reliable Recipes," includes the use of four parts of honey to eleven of sugar in the making of water ices to prevent graining of sugar.

Increase Use of Honey

American Honey Institute reports many other publications carrying honey items particularly "Bakers Helper." "Grocery Trade News" and "Modern Living." Advertising of honey is used in city papers particularly the advertising of John Wanamakers Store in Philadelphia advertising a cosmetic called Frozen Honey and Milk as a beautifier. In Milwaukee, Wisconsin, the Chemicraft Laboratories advertise a Juvene-all purpose cream. This cream contains a large percentage of honey and is reported to be very satisfactory. Newspapers all over the country have been carrying suggestions for the use of milk and honey drinks. Honey is also being talked at the summer resort dance halls for the blending or making of cocktails. There is no doubt about people being honey-conscious. There is no doubt about the increased consumption of honey.

National Honey Week

The dates of this week are November 13th to 18th. Stickers will be available if beekeepers want them. Write directly to American Honey Institute, Madison, Wisconsin.

Recipe cards to be given to customers are also available which they may return to the Institute with included 10 cents in postage stamps for a full set of honey recipes.

If beekeepers will make their wants known early, American Honey Institute will give them the service they need but the Institute staff is too small to handle a last minute volume of business. It is not too early to start plans for National Honey Week. If you need suggestions, write to American Honey Institute and inclose postage stamps for reply.

American Medical Association Convention

Through the courtesy of the Kellogg Company, American Honey Institute had an exhibit at the American Medical Association Convention held in Milwaukee on June 12th to 16th. This was the first time that the secretary had a chance to discuss honey with doctors, nurses, dieticians, and others. Mr. Jas. I. Hambleton sent a special honey exhibit from the Federal Bee Culture Laboratory containing information of particular interest to doctors. Much interest was shown in the Institute Bibliography sheet on the use of honey in infant feeding and the food value references of honey. 1602 doctors registered their desire to receive this information from the Institute. Now the Institute must find a way to get these references to the doctors. Each set will take 4½ cents complete, but with the treasury as low as it is now, these requests will have to be held.

American Home Economics Convention

Again at the invitation of the Kellogg Company, American Honey Institute attended the American Home

Economics Association Convention at Milwaukee from June 20th to 30th. The Federal exhibit of honey accompanied this exhibit also. Many new contacts were made and much information distributed to over 600 registered home economists that visited the Kellogg-Institute booth.

Catching a Swarm

By Calvin R. Jones
Panama Canal Zone

Before I joined the army, I had a few hives of bees and when they swarmed, I always had quite a bit of trouble getting them back into a hive. I lived on a rented farm up in Midland County, Michigan and the fellow who owned the place would not allow me to cut off the limbs of his shade trees or apple trees. One day I had a swarm to light on a big maple tree in front of the house. I tried everything I ever heard of or could think of to get them to stay in a hive but they just wouldn't do it. Just when I thought I had them, they would fly back up in the tree again.

I finally went to one of my hives and got a frame of brood and shaking all the bees off, took it and held it up close to the swarm and in a few minutes all the bees clustered on the frame and I put them in the hive and didn't have any more trouble with them. I have tried the same thing several times since and it always works.

I have often wondered if anyone else ever tried the same thing and if it will help some other fellow. I am glad to pass the information on.

[This is an excellent way of catching swarms. It is not necessary to use combs of brood. Just two dry combs fastened an inch apart, will attract the bees and it is not difficult to hive them.—Editor.]

Honey--Red Raspberries --and Cream

This office has just been regaled with a serving of the above combination. If you haven't tried this, try it on yourself first and then get out and sell it to your customers. It certainly makes an ideal combination. Some of that nice rich clover or alfalfa or tupelo honey all over the berries and good cold rich cream and you have your "heart's delight."

As a true friend is the sweetest contentment in the world, so in his qualities he well resembleth honey. Nothing is more sweet to the taste, nothing more sharp and cleansing. For myself, I know I must have faults, and therefore I care not for that friend that I shall never smart by.—Culled from an early writer by W. H. Hull.

Are You Doing Your Share?

"NOTE THAT MANY STATES ARE WITHOUT HONEY RECEIVERS! IF YOUR STATE IS OMITTED, WON'T YOU VOLUNTEER TO DO YOUR BIT AND ACT AS A RECEIVER? WRITE LEWIS PARKS, CHAIRMAN FINANCE COMMITTEE, WATERTOWN, WISCONSIN."

AMERICAN HONEY INSTITUTE HONEY RECEIVERS

—o—

These individuals and firms have agreed to take in honey donated to the American Honey Institute, sending a check to American Honey Institute, 417 North Few Street, Madison, Wisconsin, for the value of the honey at the market price, less the freight:

Arizona, Bee Kist Products, Inc. 8272 Jefferson St. — Pheonix
California, George J. Brown ——— Fresno
California, Geo. L. Emerson, ——— Los Angeles
California, H. M. Krebs ——— Sacramento
California, Roy K. Bishop ——— Orange
California, C. A. Wurth ——— Riverside
California, A. L. Matthews ——— Ceres
Colorado, Colo. Honey Producers Ass'n. ——— Denver
Connecticut, Allen Latham ——— Norwichtown
Florida, W. K. Loft ——— Box 480, Orlando
Illinois, Dadant & Sons ——— Hamilton
Iowa, Sioux Honey Association, ——— Sioux City
Kansas, J. F. Garner, Mgr., Clover Hill Apiaries Co., ——— Sabetha
Louisiana, Geo. W. Bohne ——— Luling
Michigan, M. H. Hunt & Son, ——— Lansing
Michigan, A. G. Woodman Co. ——— Grand Rapids
Minnesota, B. I. Evans, Windom
Minnesota, Earl W. Rood ——— Mankato
Minnesota, A. I. Root Co. ——— St. Paul
Minnesota, P. J. Doll Co. ——— Minneapolis
Minnesota, G. C. Mathews ——— Minneapolis
Minnesota, M. W. Couisineau ——— Moorhead
Minnesota, Standard Lumber Co. ——— Winona
Nebraska, O. S. Bare (Extension Specialist) College of Agriculture ——— Lincoln
Ohio, Fred W. Muth Co. ——— Cincinnati
Ohio, E. W. Peirce Co. ——— Zanesville
Oregon, S. D. Williams, 5125 82nd Ave. ——— Portland
New Hampshire, Geo. C. Barton ——— Meriden
New York, E. T. Cary (Midland Ave. & Tallman St.) ——— Syracuse
North Dakota, Chas. Engle ——— Fargo
South Dakota, Lothrop Nursery Co. ——— Aberdeen
Texas, T. W. Burleson ——— Waxahachie
Utah, Superior Honey Co. ——— Ogden
Wisconsin, James Gwin (Dept. of Markets) ——— Madison
Wisconsin, A. H. Seefelt ——— Kewaskum
Wisconsin, George Jacobson ——— Kaukauna
Wisconsin, Edward Hassinger, Jr. ——— Greenville
Wisconsin, Ed Byrns, County Agent, Wash Co. West Bend

Send your donations of honey to the receiver nearest to you.

AMERICAN HONEY INSTITUTE
417 N. Few Street **Madison, Wisconsin**

25c - QUEENS - 25c

Do You Know that we have reared more than 360,000 queens? We supply only 100% queens and any customer can be sure of satisfaction or money refunded.

First Quality Queens, 25c any number.

MERRILL BEE CO., Buckatunna, Miss.

MISSISSIPPI'S OLDEST SHIPPERS

The POSTSCRIPT

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

The persimmon tree on my farm is something of a novelty for there is no other, so far as I know, in this part of Iowa. Although it is about twenty years old it has never borne any fruit. It blooms freely and when the wax-like flowers are open the bees fairly swarm over them. I like to lie on my back to look up and watch the bees at work and listen to their humming. To judge from the activity in my tree the persimmon must be a great source of bee pasture where it is abundant. How often it happens that a single tree by itself is unfruitful for lack of pollination.

— : —

What a surprising amount of activity centers in a colony of plant lice. Ants are always busy moving about among them and apparently providing for their needs. In return they secure honeydew for food and at times probably eat the lice as well. The larvae of the lace wing fly and of the lady beetles devour immense numbers of the aphids and seem to depend upon them entirely for their food. When the honeydew is secreted in abundance the honeybees come and fill their combs with it. Many a beekeeper has seen his hives filling up and thought that he had a good honeyflow only to learn later that it was only honeydew and to wonder what to do with the stuff.

— : —

The article about sumac by Wendell Card in the July issue reminds me that for years I have been seeking information about that plant in the middle west. Whereas beekeepers in the northeastern states all report that it is a valuable source of honey, I have been unable to find any evidence that is important anywhere else. Never have I observed bees making other than chance visits to sumac in Iowa.

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On page 268 of the July issue, Jay Smith comes back at me for my opinions of the small mating hives. Jay makes a good case for the baby nuclei. Since his experience has been so much more extensive than mine his opinions are entitled to respect. At that I am still a bit doubtful. Queens raised with such small clusters of bees seem a bit like orphans to me. However, we must admit that many an orphan calf has developed into a good cow.

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Although I never met him but once, I have developed a real admiration for H. D. Murray of Texas. He seems to understand bees as few men do and always has something worth saying when he writes. I wish his letters might be more frequent.

— : —

In a letter from Rev. Bedinger of California, he raises the question as to whether it is wise to cut out small patches of drone cells from otherwise good combs and attempt to have the comb patched by inserting a piece of foundation. I have never worried about a few drones. If there was much drone comb, I melted up the entire comb and replaced it with new foundation. A normal colony will always have a few drones during the greater part of the productive season. Unless the number is excessive, I regard them as desirable and expect better results than where there are none at all. As soon as the flow is over the bees will drive them out.

After giving the bees full combs of all worker brood only to see them tear down a portion to replace with drone comb, or to build drone-cells in brace and burr combs between the frames, I have decided that it is best to allow natural instincts to govern within reasonable limits.

— : —

S. Skovbo sends me a specimen of **Psoralea lanceolatum** from Oregon with a note to the effect that bees work on it all summer but that he never could see that they got much out of it.

The Psoraleas are widely distributed and there are numerous species of them. Since they are legumes like many of our finest honey plants such as clover and alfalfa, we might expect bees to be attracted to them. However, I can find nothing to indicate that they ever prove of much value to the beekeeper. As Skovbo says, the bees visit them freely but as far as we know they seldom get much from them. Some of the smaller wild bees seem to depend upon Psoralea.

— : —

Skovbo sends another plant—a **Polygonum** which he rates about the same as Psoralea. This is one of the smartweeds, another very widely distributed group of plants with many species. Many of this group are valuable to the beekeeper and some yield large crops of surplus honey. The best known is the Lady's thumb or Heartsease which came from Europe and has made itself at home in the grain fields of many states.

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There seems to be much confusion among the beekeepers in regard to Indian Corn as a source of honey. Since corn is so generally cultivated in large fields the yield of honey would be immense if the plant was a source of abundant nectar. The bees visit the corn fields in large numbers, at times, in search of pollen. Of late I have spent some time in watching the bees at work on the corn tassels. So many are busy that their humming could easily give the impression of a honeyflow. A careful watch reveals the fact that they are getting only pollen. We know, however, that they do sometimes get honeydew from corn. This comes in two forms, an insect secretion when plant lice are abundant, and as a natural plant exudation at the base of the leaf.

— : —

This has been an unusual season in this part of western Iowa. In spring and early summer when we normally get our heaviest rainfall, there has been scarcely any. Up to July first we were about nine inches short of normal precipitation. In July when we usually expect to be dry we are getting heavy rains. Crops which were laid by unusually clean are getting green with weeds and the problem of getting rid of the weeds at a time when they are usually out of the way for the season is a serious one. One rain in July gave us more water than fell in the entire month of June.

White Dutch Clover which was formerly the dependence of the beekeeper promised a wonderful crop early and the flow did start off well but the plants soon burned up with the drouth. Sweet clover proved to be a dry weather plant and remained green and the flow continued. Rains came in time to save the sweet clover honey crop although the new seeding was dried out in many places. A new pasture which we had planted was entirely killed while the old plants across the fence kept on blooming. It is this ability to stand dry weather which makes sweet clover so valuable in the Great Plains region.

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I have recently driven over several counties in the dry area of western Iowa and found the farmers with sweet clover with plenty of pasture while those who depend upon bluegrass in hard lines to find feed for their live stock. Sweet clover is winning its way into popular favor as a farm crop in regions where farmers have been very slow to accept it. More bee pasture and safer locations for beemen.

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In the Editor's Answers in the July issue in answering the query about buckwheat from Texas, he overlooks the fact that buckwheat does not yield nectar to amount to anything in Texas or other parts of the central west.

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Prof. Paddock, Iowa State Apiarist, continues to boost the Caucasian bees. In the last issue of the Bulletin issued from his office he suggests that the use of Caucasians would greatly increase the income of Iowa beemen because of their ability to work on red clover. However, red clover is no longer the staple farm crop that it once was. Sweet clover is replacing it in many places.

FRANK C. PELLETT.

What About Low Prices?

(Continued from page 321)

selling it. The grocers simply would not buy it. I left it on consignment with grocers, (some will say this is not a wise thing to do. Possibly not, but as far as I am concerned, it has built a honey market for me). Not much extracted honey was sold that first year. One mistake I made was that I asked the same price for extracted honey as I did for comb honey. In order to sell extracted honey, it must be priced a few cents less than comb honey. The price asked for both comb and extracted honey was 25 cents per pound in any size container, the largest being the 5-pound pail.

In 1928-29 I sold my extracted honey for 20 cents. It started to sell better right away. During 1929 a swing was made from comb to extracted honey. When the slump came, my prices dropped. In 1930 I received 20 cents for a 1-pound jar and 80 cents for a 5-pound pail. The result has been that I have reduced my prices a little every now and then so at the present time, I am selling my honey at 15 cents for a pound jar and 60 cents for a 5-pound pail, and I am selling very little comb honey. There is no demand for it as there used to be. It is now selling for the same price as extracted honey and sometimes even less, and yet it is not moving.

Today honey is selling better than ever before in my beekeeping career. It seems as if people have found out how good and wholesome a food it is. Of course the price is low, but is it not a good thing after all?

No doubt more people are buying honey today on account of the price than on account of anything else. More extracted honey is being sold than ever has been sold. When times get normal, we will be able to sell honey at a better price coupled with a very low cost of production which the beekeepers have been forced to adopt in the last few years, and then the production of extracted honey will put beekeeping on a level with other business.

I have found, in my experience, that most people like honey. I have only met a few that do not. In the time of plenty, people bought according to their fancy. Now it is different. Money is the question. Extracted honey is cheap and so there is a demand for it. In the nine years that I have been selling honey, I have seen it swing from comb to extracted honey, and that is the honey which rules today.

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BY THE TRAIN LOAD

OVER FOUR CARLOADS IN STOCK TO ASSURE
PROMPT SHIPMENT OF YOUR ORDERS

COMB HONEY WRAPPERS, CARTONS AND
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GLASS JARS

Write for Price List. It's a Money Saver.

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are not always those quoted at the lowest price. **RESULTS COUNT.** It takes so little honey to pay the difference in a really good queen, and just an ordinary queen that you cannot afford to take chances on getting poor queens.

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"WHIRL DRY"
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Queens warranted purely mated and absolutely satisfactory.
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We ship fresh from our yards within 24 hours after receipt of your order.

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Send Sample and best price Frt. Paid to Cincinnati, O.
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10-lb. Pails, per carton of 100	8.75
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NONE BETTER
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Special Introductory Order, 10 Queens,	$2.35

Orders filled promptly or money returned.
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The
AMERICAN BEE JOURNAL

Established by Samuel Wagner in 1861

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The Oldest Bee Journal in the English Language

SEPTEMBER, 1933

Published Monthly at Hamilton, Ill.

Entered as second-class matter at the Post-office at Hamilton, Illinois. C. P. Dadant, Editor; Frank C. Pellett, Field Editor; G. H. Cale, Associate Editor; Maurice G. Dadant, Business Manager.

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1-lb. Jars	24 @	.80	.85	.80	.85	.85
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